Appendix C Southwestern Willow Flycatcher Survey Report

This page intentionally left blank.

I-10 Corridor Project 2013 Southwestern Willow Flycatcher Report

Submitted to:

San Bernardino County Department of Public Works
825 E. Third Street
San Bernardino, CA 92415

Submitted by:

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS
1801 Park Court Place, B-103
Santa Ana, CA 92701

August 2013

CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

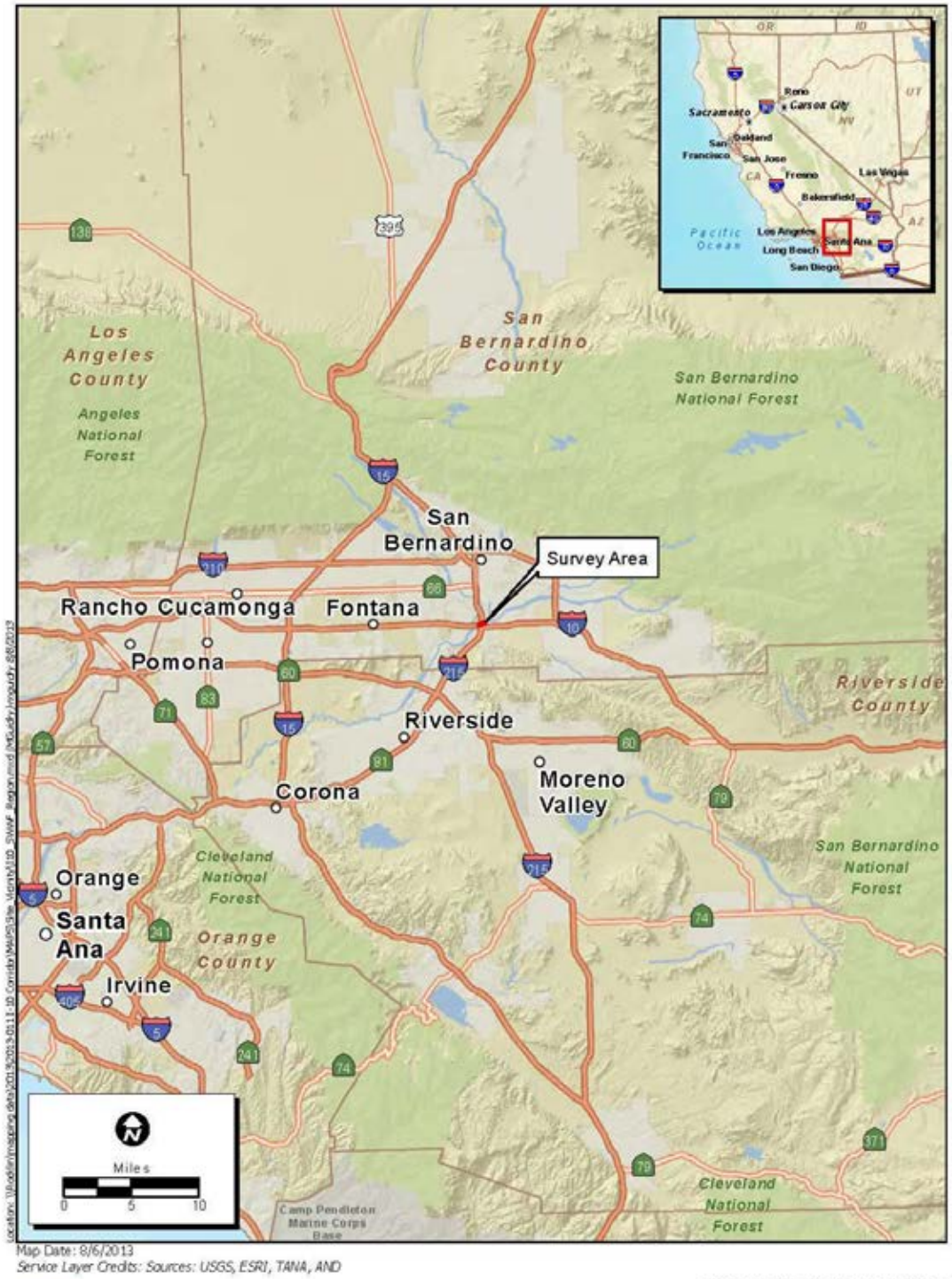
1.0 INTRODUCTION

1.1 Survey Purpose

The San Bernardino Association of Governments and the California Department of Transportation are proposing the I-10 Corridor Project (Project), which will add a high-occupancy vehicle lane to the existing Interstate 10 Freeway (I-10) in San Bernardino County between Haven Avenue in Ontario and Ford Street in Redlands. The Project area will include the existing freeway as well as easements and staging areas along the freeway. The Project area crosses the Santa Ana River in Colton through an area included in the U.S. Fish and Wildlife Service's 2013 revision to critical habitat for the southwestern willow flycatcher (*Empidonax traillii extimus*), a bird that is both federally and state-listed as endangered (FR 2013). Surveys were conducted within the area where the Project crosses the Santa Ana River to determine the presence or absence of the southwestern willow flycatcher in order to minimize potential Project impacts to the species.

1.2 Survey Area Location

The survey area is located in the USGS 7.5-minute San Bernardino South quadrangle within the San Bernardino Land Grant. The survey area encompasses the Santa Ana River channel on the east side of the City of Colton and the south side of the City of San Bernardino, immediately north of the intersection of I-10 and Interstate 215 (I-215) Freeways (Figures 1 and 2). The survey area is roughly 30 acres with approximately six acres of potentially suitable breeding habitat for the southwestern willow flycatcher (six acres surveyed per biologist per day). The Santa Ana River flows year round and the width of the riparian zone ranges from a minimum of approximately 20 feet in the western end of the survey area to a maximum of approximately 500 feet at the eastern end. Elevations within the survey area range from approximately 300 feet above mean sea level at the eastern end to approximately 290 feet at the western end.



Map Date: 8/6/2013
Service Layer Credits: Sources: USGS, ESRI, TANA, AND

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

Figure 1: Regional Map

2013-011 I-10 Corridor Southwestern Willow Flycatcher

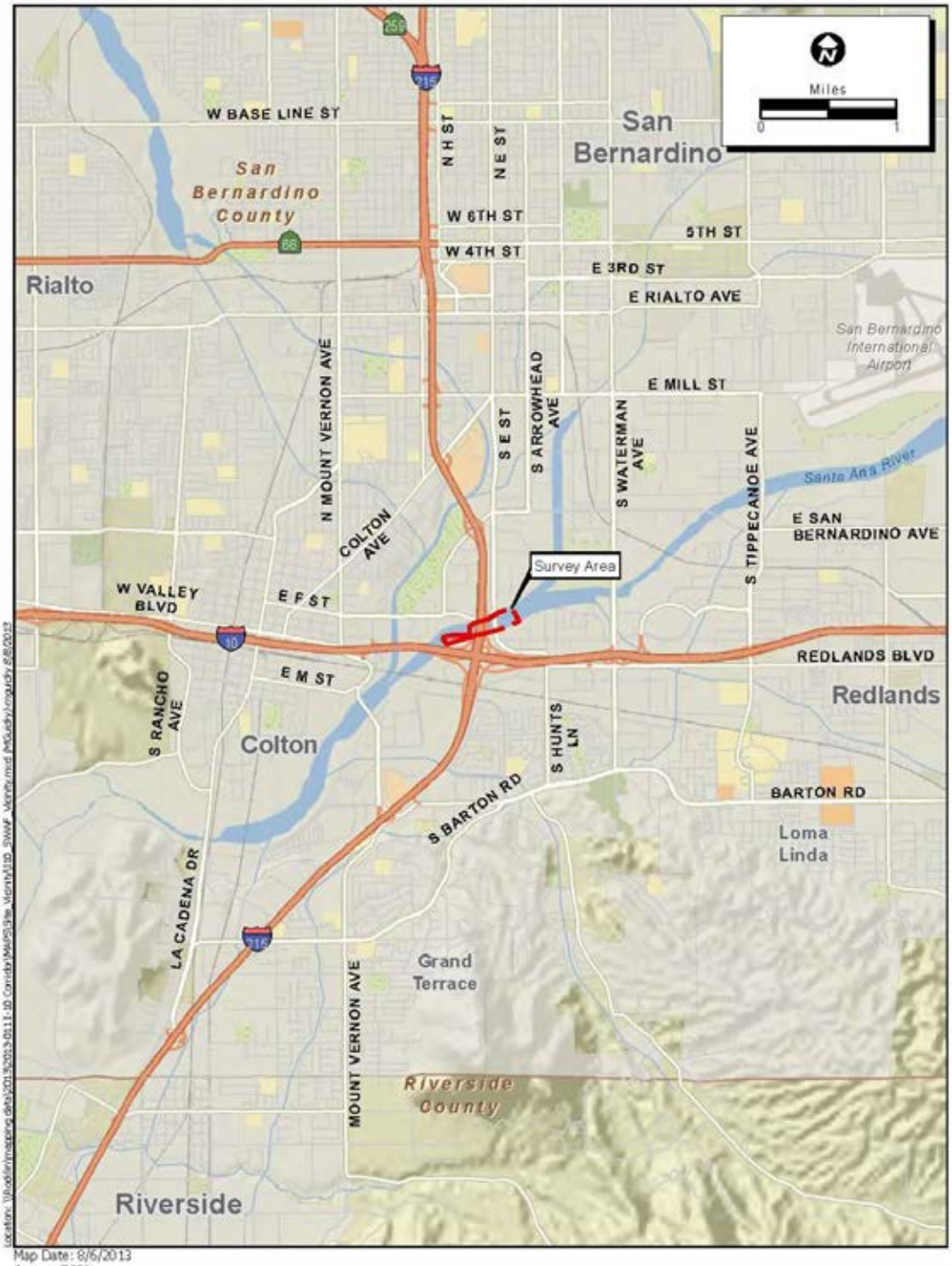


Figure 2: Vicinity Map

2013-011 I-10 Corridor Southwestern Willow Flycatcher

2.0 VEGETATION AND HABITAT

Vegetation communities within the survey area are classified according to *A Manual of California Vegetation* (Sawyer, Keeler-Wolf, and Evans 2009). Vegetation within the survey area consists of riparian communities including Fremont cottonwood forest (*Populus fremontii* Alliance), black willow thickets (*Salix gooddingii* Alliance), and mulefat thickets (*Baccharis salicifolia* Alliance), as well as upland communities including California sagebrush – California buckwheat scrub (*Artemisia californica – Eriogonum fasciculatum* Alliance). Much of the survey area, especially the western portion, consists of sandy riverbed that is either bare or vegetated with ruderal annuals.

2.1 Fremont Cottonwood Forest (*Populus fremontii* Alliance)

Fremont cottonwood forest within the survey area consists of habitat dominated by mature Fremont cottonwoods but with additional overstory species such as black willows and red willows (*Salix laevigata*). Understory vegetation includes mulefat, wild grape (*Vitis* sp.), and mugwort (*Artemisia douglasiana*). Fremont cottonwood forest occurs at the eastern end of the survey area on both the north and south sides of the river (Appendix C, Photograph 1).

2.2 Black Willow Thickets (*Salix gooddingii* Alliance)

Black willow thickets within the survey area consist of stands of black willows but also include red willows and small amounts of mulefat, tamarisk (*Tamarix ramosissima*), and castor bean (*Ricinus communis*). Black willow thickets occur within the eastern end of the survey area and in a linear strip on the south side of the river channel at the western end (Appendix C, Photographs 2–5).

2.3 Mulefat Thickets (*Baccharis salicifolia* Alliance)

Mulefat thickets within the survey area consist of dense, nearly monotypic stands of mulefat. Patches of mulefat thickets are found near the center of the survey area on either side of the I-215 overpass, as well as along the south side of the river along the western end (Appendix C, Photographs 4–8).

2.4 California Sagebrush – California Buckwheat Scrub (*Artemisia californica – Eriogonum fasciculatum* Alliance)

California sagebrush – California buckwheat scrub consists of habitat dominated by these two species with smaller amounts of scalebroom (*Lepidospartum squamatum*), annual bursage (*Ambrosia acanthicarpa*), jimsonweed (*Datura wrightii*), deerweed (*Acmispon glaber*), and non-native annual grasses. California sagebrush – California buckwheat scrub occurs on the north side of the survey area west of I-215 and on the south side at the eastern end, where riparian habitat transitions to upland habitat (Appendix C, Photograph 1).

2.5 Southwestern Willow Flycatcher Breeding Habitat

The southwestern willow flycatcher typically breeds within dense stands of trees or shrubby riparian vegetation that is equal to or greater than 10 feet tall (Allison et al. 2003). Suitable southwestern willow flycatcher breeding habitat occurs in Fremont cottonwood forest and black willow thickets at the eastern end of the survey area. Marginally suitable breeding habitat consisting of a linear strip of black willow thickets is located on the western side of the survey area on the south side of the river.

2.6 Disturbances

Disturbances observed within the survey area include two overpasses, one for I-215 and one for East South Street, evidence of gang activity in the form of excessive graffiti and empty spray paint cans (Appendix C, Photographs 9–10), and a small homeless encampment on the western end of the survey area.

Additionally, low numbers of brown-headed cowbirds (*Molothrus ater*) were observed, although it should be noted that San Bernardino Flood Control was actively trapping brown-headed cowbirds at the southeastern end of the survey area.

3.0 METHODS

3.1 Survey Dates, Personnel, and Conditions

All surveys were performed by ECORP Consulting, Inc. biologist Ben Smith (Federal Recovery Permit TE-67390A-0, California Department of Fish and Wildlife (CDFW) Scientific Collecting Permit SCP-10933). Table 1 lists the dates, times, survey area, weather conditions, and additional personnel assisting with the surveys.

Table 1. Survey Dates, Personnel, and Conditions

Date	Surveyors	Time		Temperature (°F)		Cloud Cover (%)		Wind Speed (mph)	
		start	end	start	end	start	end	start	end
5/31/13	Ben Smith Sonya Steckler	0825	1040	72	79	100	0	0–2	0–2
6/05/13	Ben Smith	0715	1030	60	75	100	50	0	0
6/12/13	Ben Smith	0710	1025	65	75	60	40	0-2	1-3
6/25/13	Ben Smith Carley Lancaster	0700	1005	68	80	0	0	0	0-3
7/4/13	Ben Smith	0645	1005	72	82	25	25	0	0-2

3.2 Southwestern Willow Flycatcher

Surveys for the southwestern willow flycatcher followed the protocol outlined by Sogge et al. (2010). The 2010 protocol recommends five surveys during three survey periods, with two

surveys occurring within each of the last two survey periods. These three survey periods are Period 1: May 15 to 31; Period 2: June 1 to 24; and Period 3: June 25 to July 17.

Each survey was completed in one day. Surveys were conducted within all areas of suitable habitat along east-west transects spaced approximately 100 feet apart. Southwestern willow flycatcher vocalizations were played at approximately 100-foot intervals along each transect using a portable MP3 player and speaker system. Vocalizations were played following an initial one-minute listening period. The period of listening followed by audio playback was repeated with another listening period before moving to the next 100-foot interval. Locations of willow flycatcher detections were recorded using a handheld GPS unit capable of 3- to 10-foot accuracy. Survey data were recorded in a field notebook and copied onto Willow Flycatcher Survey and Detection Forms. Completed survey forms are included in Appendix A.

4.0 RESULTS

Two willow flycatcher detections were made in Period 1 during the first survey on May 31 (Table 2, Figure 3). Two willow flycatchers were detected in Period 2 during the third survey on June 12. Willow flycatchers were not detected within the survey area during Period 3.

The two willow flycatcher detections on May 31 both occurred on the south side of the Santa Ana River at the eastern end of the survey area. The first and easternmost willow flycatcher was observed foraging from a branch in Fremont cottonwood forest. The bird was visually identifiable as a willow flycatcher; however, it was non-vocal and did not respond to audio playback. The second detection occurred ten minutes later approximately 280 feet to the west. A willow flycatcher gave a weak "fitz-bew" response to audio playback and may have been a second detection of the previously observed individual.

The two willow flycatchers observed on June 12 were both found on the north side of the Santa Ana River at the eastern end of the survey area. The first and westernmost willow flycatcher was detected in Fremont cottonwood forest when it responded to audio playback with the characteristic "fitz-bew" song. The second willow flycatcher was detected in black willow thickets approximately 300 feet northeast of the first and also responded to audio playback with the characteristic "fitz-bew" song.

Table 2. Willow Flycatcher Survey Results

Survey Period	Date	11N UTM	Status	Detection/Habitat Notes
Period 1	5/31/13	473011mE 3769717mN	assumed migrant	non-vocal, non-responsive WIFL perched in *Populus fremontii* Alliance
		472964mE 3769650mN	assumed migrant	"fitz-bew" response to recording from within *Populus fremontii* Alliance
Period 2	6/12/13	472944mE 3769761mN	assumed migrant	"fitz-bew" response to recording from within *Populus fremontii* Alliance
		473015mE 3769815mN	assumed migrant	"fitz-bew" response to recording from within *Salix gooddingii* Alliance

4.1 Incidental Special Status Species

Several wildlife species included on the CDFW special animals list (CDFG 2011) were observed within the survey area. Adult and juvenile yellow warblers (*Setophaga petechia*), CDFW Species of Special Concern (SSC), were found throughout the survey area, but were most abundant in the eastern portion of the survey area. Adult and juvenile least Bell's vireos (*Vireo bellii pusillus*), which are state and federally-listed as endangered, were also observed in the eastern portion of the survey area. A least Bell's vireo survey report is being submitted under a separate cover. Finally, one individual Santa Ana River woolystar (*Eriastrum densifolium* ssp. *sanctorum*), a plant that is federally and state-listed as endangered, was observed in the eastern portion of the survey area approximately 2,600 feet northeast of I-10 and outside of the proposed disturbance limits for the Project (Appendix C, Photographs 11–12). A list of wildlife species observed during the surveys is included as Appendix B. Special status species observations are summarized in Table 3.

Table 3. Incidental Special Status Species Locations

Species	Date	Location
yellow warbler *(Setophaga petechia)*	all	Throughout survey area. Adults and fledglings observed
least Bell's vireo (*Vireo bellii pusillus*)	5/31	11N, 473141mE, 3769820mN Singing territorial male
	6/5	11N, 473141mE, 3769820mN Singing territorial male
	6/12	11N 473272mE, 3769862mN Singing territorial male
	6/25	11N 473062mE, 3769765mN Singing territorial male
	7/4	11N 473129mE, 3769770mN Adult male with at least two dependent fledglings 11N 473001mE, 3769713mN Non-vocal individual with fresh plumage
Santa Ana River woolystar (*Eriastrum densifolium* ssp. *sanctorum*)	6/25	11N 473062mE, 3769765mN One individual

5.0 CONCLUSIONS

Breeding status of the southwestern willow flycatcher was not confirmed within the survey area. Presence of the southwestern willow flycatcher, according to survey protocol, is determined by observation of breeding willow flycatchers or by willow flycatcher detection during the third survey period (June 25–July 17), at which point migrant willow flycatchers should no longer be present in the Southwest (Sogge et al. 2010). The four willow flycatchers observed during survey periods 1 and 2 are assumed to be individuals passing through the area on migration.

5.1 Recommendations

Although the southwestern willow flycatcher was not found breeding within the survey area, marginally suitable breeding habitat begins approximately 500 feet northeast of where I-10 crosses the Santa Ana River and higher quality potential breeding habitat begins approximately 2,500 feet northeast of this area. The project should avoid activities that might adversely affect the vegetation in these areas in order to maintain suitable breeding habitat for southwestern willow flycatchers that could occupy the site in the future.

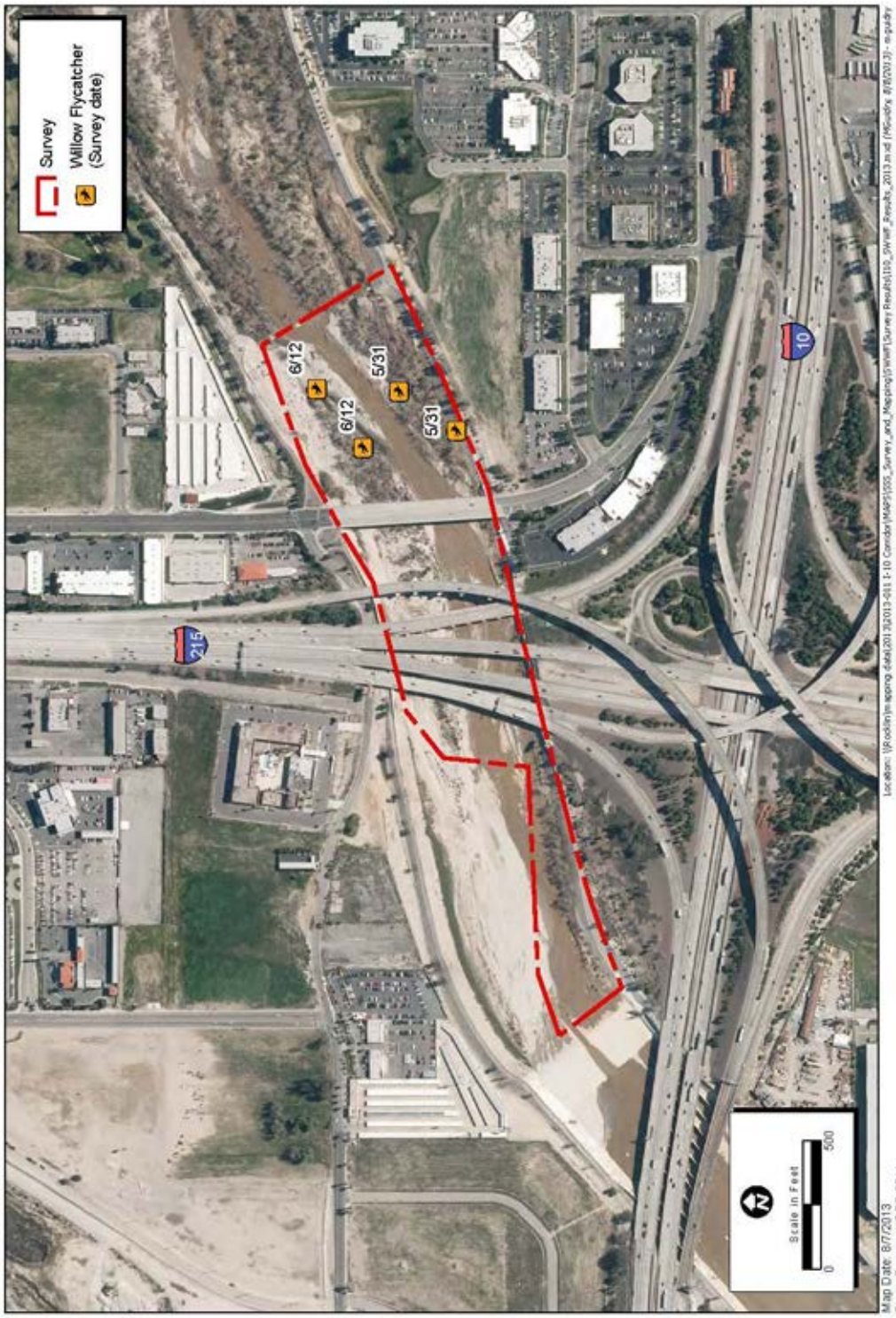


Figure 3: Results Map

2013-011 I-10 Corridor Southwestern Willow Flycatcher

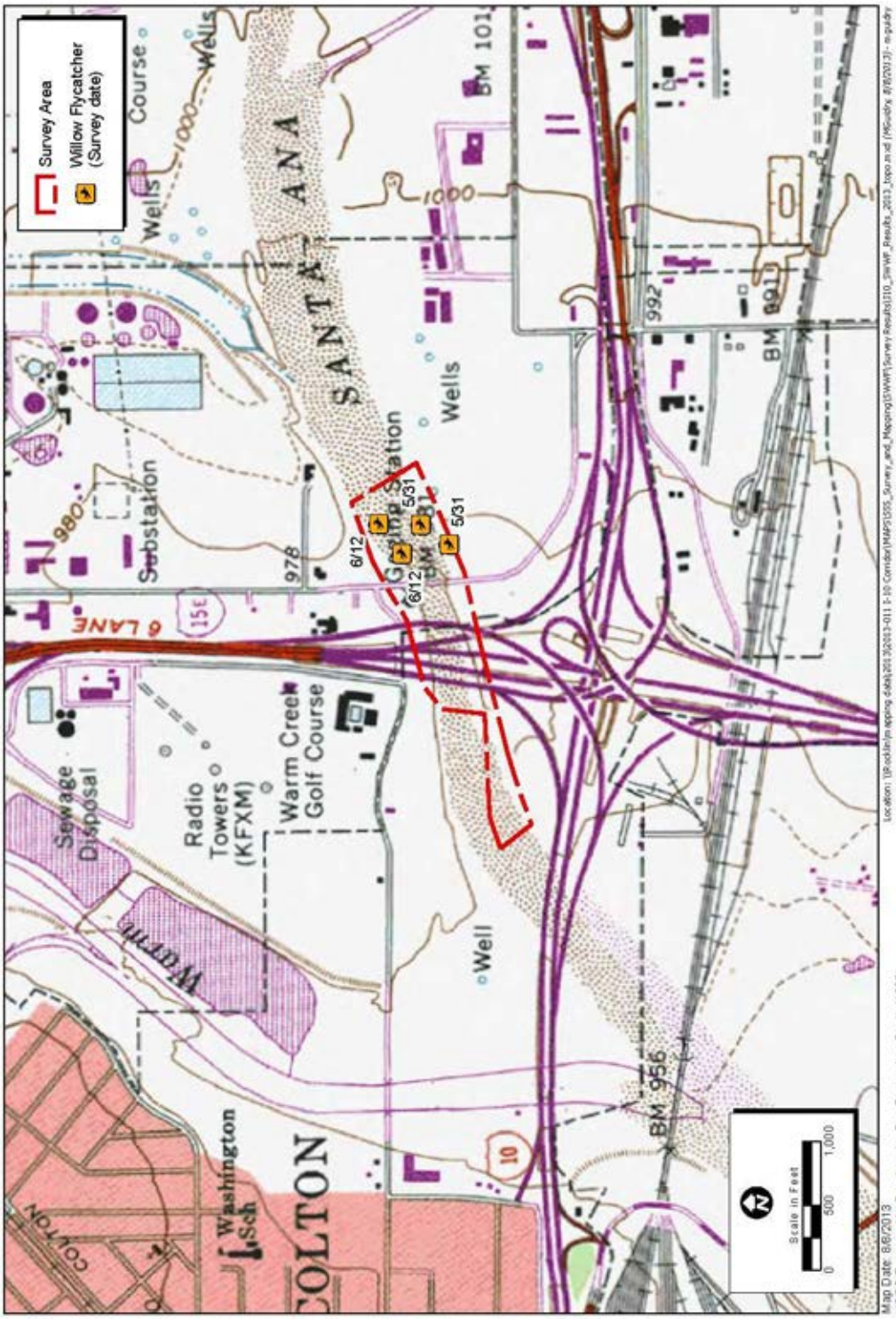


Figure 4: Results Map
2013-011 I-10 Corridor Southwestern Willow Flycatcher

6.0 CERTIFICATION

I hereby certify that the statements furnished above and in the attached exhibits present the data and information required for this biological evaluation, and that the facts, statements, and information presented are true and correct to the best of my knowledge and belief. Field work conducted for this assessment was performed by me or under my direct supervision. I certify that I have not signed a non-disclosure or consultant confidentiality agreement with the project applicant or the applicant's representative and that I have no financial interest in the project.

DATE: 8/02/2013

SIGNED: _____

Benjamin Smith

LITERATURE CITED

Allison, L.J., Paradzick, C.E., Rourke, J.W., and McCarthey, T.C. (2003). A characterization of vegetation in nesting and non-nesting plots for southwestern willow flycatchers in central Arizona. Studies in Avian Biology 26:81—90.

Baicich, P., and Colin, J. (2005). Nests, Eggs, and Nestlings of North American Birds, 2nd Edition. Princeton University Press, Princeton, NJ.

[CDFG] California Department of Fish and Game. (2011). Special Animals List. Retrieved on August 1, 2012 from: http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/spanimals.pdf.

[FR] U.S. Office of the Federal Register. 2013. Endangered and Threatened Wildlife and Plants; Designation of Critical Habitat for Southwestern Willow Flycatcher, final rule (50 CFR Part 17). Federal Register 78:2(3 January 2013): 344—532. from: http://www.fws.gov/southwest/es/arizona/documents/speciesdocs/swwf/fch2013/swwf_fch_fr_final.pdf.

Sawyer, J.O., Keeler-Wolf, T., and Evens, J.M. (2009). A Manual of California Vegetation, 2nd Edition. California Native Plant Society, Sacramento, CA.

Sogge, M.K., Ahlers, Darrell, and Sferra, S.J. (2010). A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher: U.S. Geological Survey Techniques and Methods 2A-10, 38 pp.

Appendix A

Completed Willow Flycatcher Survey and Detection Forms

Appendix 1. Willow Flycatcher Survey and Detection Form

Always check the U.S. Fish and Wildlife Service Arizona Ecological Services Field Office web site (http://www.fws.gov/southwest/es/arizona/) for the most up-to-date version.

Willow Flycatcher (WIFL) Survey and Detection Form (revised April 2010)

Site Name Santa Ana River I-10 improvement State CA County San Bernardino
USGS Quad Name San Bernardino South Elevation 290-300 (meters)
Creek, River, Wetland, or Lake Name Santa Ana River
Is copy of USGS map marked with survey area and WIFL sightings attached (as required)? *Yes* X *No* ___

Survey Coordinates: Start: E 473070 N 3769881 UTM Datum NAD83 (See instructions)
Stop: E 473311 N 3769480 UTM Zone 11 N
If survey coordinates changed between visits, enter coordinates for each survey in comments section on back of this page.
** ***Fill in additional site information on back of this page*** **

Survey # / Observer(s) (Full Name)	Date (m/d/y) Survey time	Number of Adult WIFLs	Estimated Number of Pairs	Estimated Number of Territories	Nest(s) Found? Y or N / If Yes, number of nests	Comments (e.g., bird behavior; evidence of pairs or breeding; potential threats [livestock, cowbirds, *Diorhabda* spp.]). If *Diorhabda* found, contact USFWS and State WIFL coordinator	GPS Coordinates for WIFL Detections (this is an optional column for documenting individuals, pairs, or groups of birds found on each survey). Include additional sheets if necessary.			
Survey # 1 Observer(s) Benjamin Smith	Date 5/31 Start 0935 Stop 1040 Total hrs 2.25	2	0	0	N	1 WIFL in riparian vegetation POFR, SAGO, SAEX, ARDO. 1 WIFL in POFR, SAGO BASA, SAEX	# Birds: 1 / 1	Sex:	UTM E: 473011 / 472964	UTM N: 3769717 / 3769650
Survey # 2 Observer(s) Benjami-Smith	Date 6/5 Start 0715 Stop 1030 Total hrs 3.25	0	0	0	N		# Birds:	Sex:	UTM E:	UTM N:
Survey # 3 Observer(s) Benjamin Smith	Date 6/12 Start 0710 Stop 1025 Total hrs 3.25	2	0	0	N	1 responsive in POFR, SAGO BASA, ARTCAL 1 responsive in SAGO, POFR, BASA along River	# Birds: 1 / 1	Sex:	UTM E: 473044 / 473015	UTM N: 3769761 / 3769815
Survey # 4 Observer(s) Benjamin Smith / Carley Lancaster	Date 6/25 Start 0700 Stop 1005 Total hrs 3	0	0	0	N		# Birds:	Sex:	UTM E:	UTM N:
Survey # 5 Observer(s) Benjamin Smith	Date 7/14 Start 0645 Stop 1005 Total hrs 3.25						# Birds:	Sex:	UTM E:	UTM N:

Overall Site Summary Totals do not equal the sum of each column. Include only resident adults. Do not include migrants, nestlings, and fledglings. 0 Be careful not to double count individuals. Total Survey Hrs 15	Total Adult Residents	Total Pairs	Total Territories	Total Nests	Were any Willow Flycatchers color-banded? Yes ___ No X If yes, report color combination(s) in the comments section on back of form and report to USFWS.
	0	0	0	0	

Reporting Individual Benjamin Smith Date Report Completed 8/8/13
US Fish and Wildlife Service Permit # TE-67390-A State Wildlife Agency Permit # 10933
***Submit** form to USFWS and State Wildlife Agency by September 1st. Retain a copy for your records.*

32 A Natural History Summary and Survey Protocol for the Southwestern Willow Flycatcher

Fill in the following information completely. Submit form by September 1st. Retain a copy for your records.

Reporting Individual Benjamin Smith Phone # 714-651-3021
Affiliation ECORP Consulting, Inc. E-mail bsmith@ecorpconsulting.com
Site Name Santa Ana River I-10 Improvements Date Report Completed 8/6/13
Was this site surveyed in a previous year? Yes ___ No X Unknown ___
Did you verify that this site name is consistent with that used in previous years? Yes ___ No ___ Not Applicable X
If site name is different, what name(s) was used in the past? ___
If site was surveyed last year, did you survey the same general area this year? Yes ___ No ___ If no, summarize below.
Did you survey the same general area during each visit to this site this year? Yes ___ No ___ If no, summarize below.

Management Authority for Survey Area: Federal ___ Municipal/County X State ___ Tribal ___ Private ___
Name of Management Entity or Owner (e.g., Tonto National Forest) San Bernardino County

Length of area surveyed: 0.9 (km)

Vegetation Characteristics: Check (only one) category that best describes the predominant tree/shrub foliar layer at this site:

X Native broadleaf plants (entirely or almost entirely, > 90% native)

___ Mixed native and exotic plants (mostly native, 50 - 90% native)

___ Mixed native and exotic plants (mostly exotic, 50 - 90% exotic)

___ Exotic/introduced plants (entirely or almost entirely, > 90% exotic)

Identify the 2-3 predominant tree/shrub species in order of dominance. Use scientific names.
Salix goodingii, Populus fremontii, Baccharis salicifolia

Average height of canopy (Do not include a range): 10 m (meters)

Attach the following: 1) copy of USGS quad/topographical map (REQUIRED) of survey area, outlining survey site and location of WIFL detections; 2) sketch or aerial photo showing site location, patch shape, survey route, location of any detected WIFLs or their nests; 3) photos of the interior of the patch, exterior of the patch, and overall site. Describe any unique habitat features in Comments.

Comments (such as start and end coordinates of survey area if changed among surveys, supplemental visits to sites, unique habitat features. Attach additional sheets if necessary.
Habitat near the project impact area is very limited. Suitable habitat is located northeast of the project area to determine if post-breeding dispersal ~~bird~~ SWFC would potentially be affected.

Territory Summary Table. Provide the following information for each verified territory at your site.

Territory Number	All Dates Detected	UTM E	UTM N	Pair Confirmed? Y or N	Nest Found? Y or N	Description of How You Confirmed Territory and Breeding Status (e.g., vocalization type, pair interactions, nesting attempts, behavior)

Attach additional sheets if necessary

Appendix B

Wildlife Compendium

Scientific Name	Common Name
Amphibians	
Pipidae	**Tongueless Frogs**
*Xenopus laevis**	African clawed frog*
Reptiles	
Phrynosomatidae	**Spiny Lizards**
Sceloporus occidentalis	western fence lizard
Uta stansburiana	common side-blotched lizard
Birds	
Anatidae	**Ducks, Geese, and Swans**
Anas platyrhynchos	mallard
Ardeidae	**Herons, Bitterns, Allies**
Ardea herodias	great blue heron
Accipitridae	**Hawks, Kites, Eagles, Allies**
Buteo lineatus	red-shouldered hawk
Buteo jamaicensis	red-tailed hawk
Accipiter cooperii	Cooper's hawk
Charadriidae	**Lapwings, Plovers**
Charadrius vociferus	killdeer
Columbidae	**Pigeons, Doves**
*Columba livia**	rock pigeon*
Zenaida macroura	mourning dove
Apodidae	**Swifts**
Aeronautes saxatalis	white-throated swift
Trochilidae	**Hummingbirds**
Archilochus alexandri	black-chinned hummingbird
Selasphorus sasin	Allen's hummingbird
Calypte anna	Anna's hummingbird
Falconidae	**Falcons**
Falco sparverius	American kestrel
Picidae	**Woodpeckers**
Picoides pubescens	downy woodpecker
Picoides nuttallii	Nuttall's woodpecker
Tyrannidae	**Tyrant Flycatchers**
Tyrannus verticalis	western kingbird
Sayornis nigricans	black phoebe
Empidonax traillii	willow flycatcher
Contopus sordidulus	western wood-pewee
Vireonidae	**Vireos**
*Vireo bellii pusillus***	least Bell's vireo**
Corvidae	**Crows, Jays**
Corvus corax	common raven
Hirundinidae	**Swallows**
Petrochelidon pyrrhonota	cliff swallow
Stelgidopteryx serripennis	northern rough-winged swallow
Aegithalidae	**Long-tailed tits, Bushtits**

Psaltriparus minimus	bushtit
Troglodytidae	**Wrens**
Thryomanes bewickii	Bewick's wren
Polioptilidae	**Gnatcatchers**
Polioptila caerulea	blue-gray gnatcatcher
Turdidae	**Thrushes**
Sialia mexicana	western bluebird
Mimidae	**Mockingbirds, Thrashers**
Toxostoma redivivum	California thrasher
Sturnidae	**Starlings**
*Sturnus vulgaris**	European starling*
Parulidae	**Wood Warblers**
Geothlypis trichas	common yellowthroat
*Setophaga petechia***	yellow warbler**
Emberizidae	**Emberizids**
Melozone crissalis	California towhee
Melospiza melodia	song sparrow
Cardinalidae	**Cardinals, Saltators, Allies**
Passerina caerulea	blue grosbeak
Icteridae	**Blackbirds**
Molothrus ater	brown-headed cowbird
Icterus cucullatus	hooded oriole
Fringillidae	**Fringilline and Cardueline Finches, Allies**
Haemorhous mexicanus	house finch
Spinus psaltria	lesser goldfinch
Spinus tristis	American goldfinch
Passeridae	**Old World Sparrows**
*Passer domesticus**	house sparrow*
Mammals	
Canidae	**Dogs, Foxes, Allies**
*Canis familiaris**	domestic dog*
Felidae	**Cats**
*Felis catus**	domestic cat*
Leporidae	**Pika, Rabbits, and Hares**
Sylvilagus audubonii	desert cottontail
Sciuridae	**Squirrels**
Spermophilus beecheyi	California ground squirrel

*nonnative species
**special status species

Appendix C

Survey Photographs

Photograph 1. Fremont cottonwood forest (*Populus fremontii* Alliance) transitioning into California sagebrush – California buckwheat scrub (*Artemisia californica – Eriogonum fasciculatum* Alliance) in the southwestern portion of the survey area.

Photograph 2. Black willow thickets (*Salix gooddingii* Alliance) along the south side of the river in the western portion of the survey area.

Photograph 3. Black willow thickets in the central portion of the survey area.

Photograph 4. Black willow thickets and mulefat thickets (*Baccharis salicifolia* Alliance) along the south side of the river in the western portion of the survey area.

Photograph 5. Black willow thickets and mulefat thickets along the south side of the river in the western portion of the survey area.

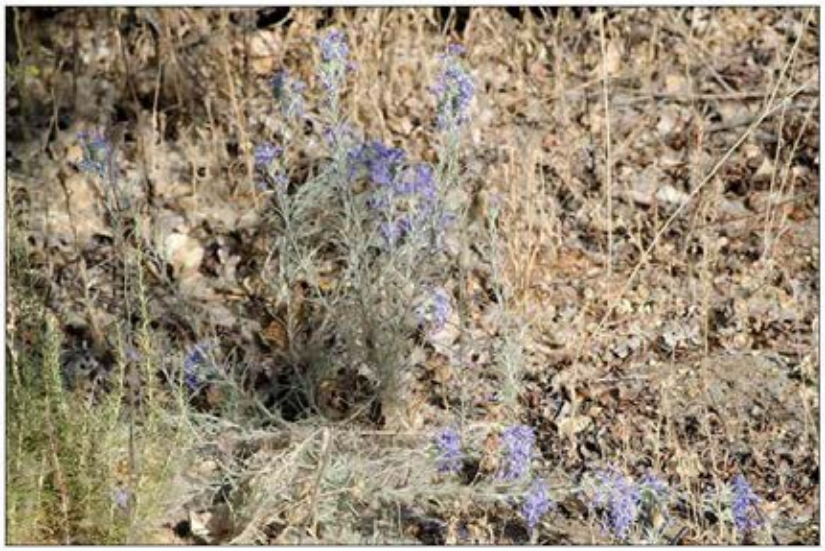
Photograph 6. Mulefat thickets along the south side of the river in the western portion of the survey area.

Photograph 7. Mulefat thickets in the central portion of the survey area.

Photograph 8. Mulefat thickets in the central portion of the survey area.

Photograph 9. Graffiti in the central portion of the survey area.

Photograph 10. Graffiti in the central portion of the survey area.



Photograph 11. Santa Ana River woolystar (*Eriastrum densifolium* ssp. *sanctorum*) in the central portion of the survey area.

Photograph 12. Santa Ana River woolystar in the central portion of the survey area.

This page intentionally left blank.

Appendix D Coastal California Gnatcatcher Survey Report

This page intentionally left blank.

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

July 10, 2013
(2013-011)

Carlsbad Fish & Wildlife Office
2177 Salk Avenue, Suite 250
Carlsbad, CA 92008
Attn: Susie Tharratt, Recovery Permit Coordinator

RE: 45-day Results Summary of 2012 Coastal California Gnatcatcher (*Polioptila californica californica*) Surveys for the Interstate 10 Freeway Corridor Project in the City of Redlands, San Bernardino County.

Dear Ms. Tharratt:

ECORP Consulting, Inc. (ECORP) is providing the results for the 2013 breeding season protocol surveys for coastal California gnatcatcher (CAGN; *Polioptila californica californica*). Focused surveys to identify CAGN territories and nest locations were conducted at along portions of the Interstate 10 Freeway (I-10) within suitable habitat near proposed construction sites for the east and westbound High Occupancy Vehicle (HOV) lanes (Project) on I-10. The portion of the I-10 surveyed is located in the City of Redlands in San Bernardino County.

A United States Fish and Wildlife Service permitted biologist conducted weekly surveys to locate CAGN on site. Surveys were conducted within the Project areas (Project), within a 300-foot buffer around the Project. A notification letter was sent via email on April 2, 2013 to notify the United States Fish and Wildlife Service (Service) of the start of weekly protocol surveys at the Project site.

Methods

Focused, protocol-level gnatcatcher surveys were conducted by federal 10(a)(1)(A) permitted ECORP biologist Shannan Shaffer (TE67555A-0) in 2013. Focused gnatcatcher surveys were conducted in accordance with 1997 Coastal California Gnatcatcher Presence/Absence Survey Guidelines published by the U.S. Fish and Wildlife Service (USFWS). Six surveys were conducted at least on week apart between April 17 and June 20 to determine the distribution and abundance of gnatcatchers within the project site. Weather conditions met USFWS survey protocol requirements designed to optimize gnatcatcher detections.

Weather conditions that were too cold (less than 45 degrees Fahrenheit), too hot (greater than 95 degrees Fahrenheit), or too windy (greater than 15 miles per hour) were avoided. Surveys were conducted by slowly walking through all appropriate habitats while listening and watching for gnatcatcher activity. Recordings of gnatcatcher vocalizations were played as an attempt to elicit responses from any gnatcatchers present. Various routes were utilized in order to conduct an unbiased presence/absence survey of the project site, and recorded vocalizations of CAGN were played for 5-15 second intervals every 40-80 feet. Less than 100 acres of suitable habitat was systematically surveyed per day for gnatcatcher presence. For each focused survey, the general weather conditions, date, start and end times, and all wildlife species observed during the surveys were documented on data sheets.

1801 Park Court Place, Building B, Suite 103 • Santa Ana, CA 92701 • Tel: (714) 648-0630 • Fax: (714) 648-0935 • www.ecorpconsulting.com

Results

A total of 6 CAGN surveys were conducted between April 17 and June 20, 2013. Table 1 summarizes the survey conditions during each of the surveys at the project site.

Table 1: Summary of CAGN Surveys and Weather Conditions

Survey #	2013 Date	Surveyor*	Time		Temperature (°F)		% Cloud Cover		Wind Speed (mph)	
			Start	End	Start	End	Start	End	Start	End
1	April 17	SLS	0845	1130	48	63	0	0	0-2	4-7
2	April 26	SLS	0855	1135	58	68	50	15	3-5	3-5
3	May 3	SLS	0855	1135	74	78	0	0	1-3	3-5
4	May 17	SLS	0855	1135	55	58	100	100	3-7	3-7
5	May 29	SLS	0835	1050	67	76	70	0	2-4	3-5
6	June 20	SLS	0900	1150	72	86	0	0	0-2	0-2

*SLS: Shannan Shaffer

No California gnatcatchers were identified within the proposed project area during the 2013 focused surveys. Additionally, Critical Habitat for species is not present within the project area. Proposed project-related activities are not expected to impact CAGN or designated Critical Habitat for CAGN. Based on these survey results, no recommendations for the recovery of the species are recommended at this time.

Please contact Shannan Shaffer at (714) 648-0630 should you have any questions concerning these survey results.

Regards,

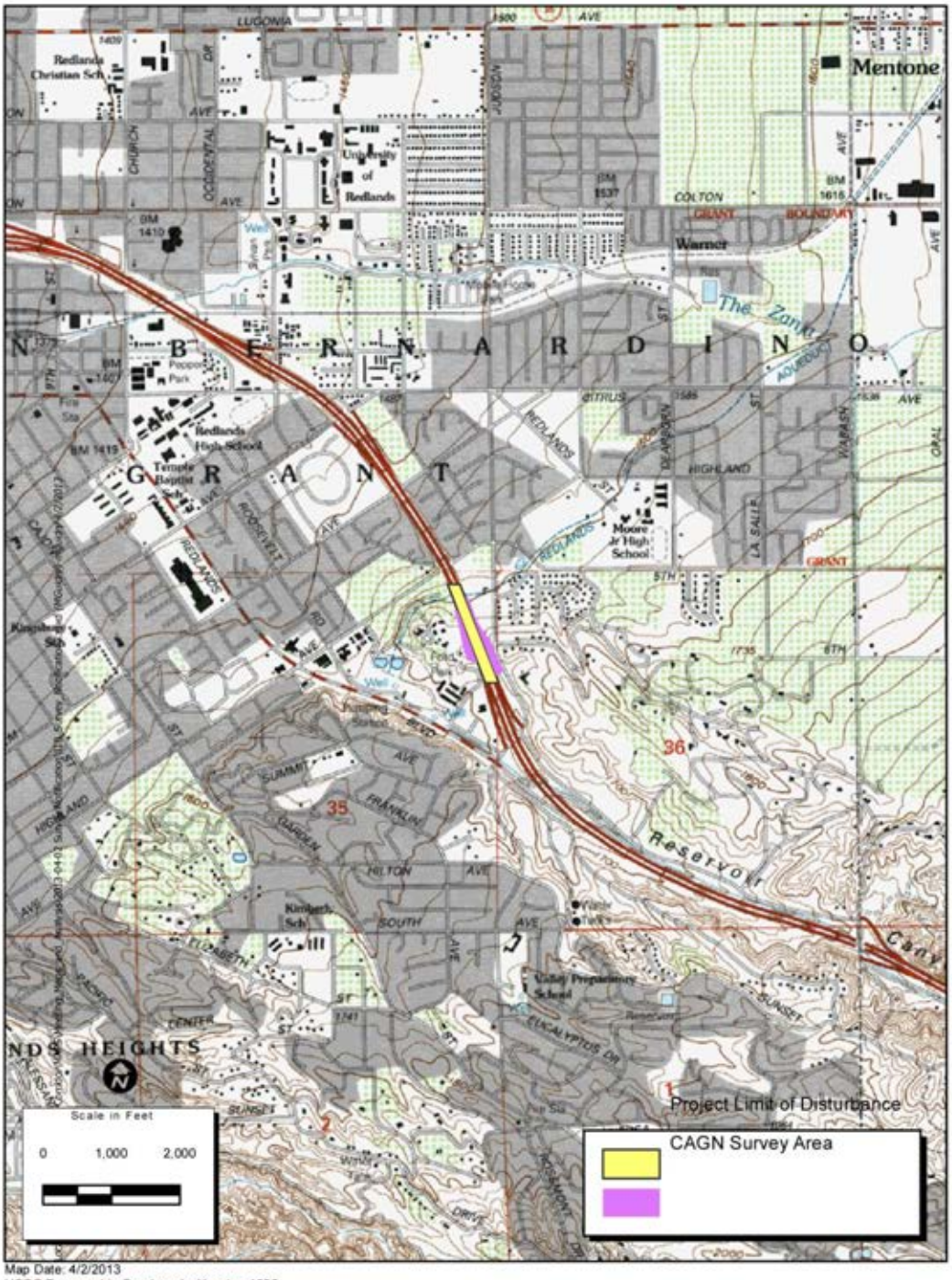
Shannan Shaffer
Wildlife Biologist

Surveyor's Certification Statement

"I certify that the information in this survey report and attached exhibits fully and accurately represents my work."

Signature _____ **(Shannan Shaffer, TE- 67555A-0) Date** July 10, 2013

Attachments:
Figure 1: Protocol CAGN Survey Area
Survey Data Sheets



Map Date: 4/2/2013
USGS Topographic Quadrangle: Yucaipa 1996

DRAFT

ECORP Consulting, Inc.
ENVIRONMENTAL CONSULTANTS

CAGN Survey Locations

PROTOCOL SURVEY DATA SHEET
for Coastal California Gnatcatcher
(***Polioptila californica californica***)

PROJECT NAME:	I-10 Corridor	PROJECT #:	2013-010

GENERAL DATA		WEATHER DATA	
Date: 4 | 17 | 13 Survey #: 1		Air temp. (F at 6" above surface in the shade)	
Surveyor(s): Shannan Shaffer		Start: 48	End: 63
		Daily High:	Daily Low:
		Cloud cover (%): 0	
Time Start: 0845	End: 1130	Precipitation [ ] yes	[X] no
Total Length of Survey:		Est. wind speed (mph):	0-7
Measurement of survey area:		Est. wind direction:	

Coastal California Gnatcatcher Observations

Bird ID should be identified on accompanying map. GPS points should be taken in UTM, Zone 11 S, NAD83, Meters

Time	ID	Sex	Activity	Northing	Easting
			NO CAGN Detected		

Other forms needed for this site [ ] photo log [ ] CNDDB form

cagn field data sheets

FIELD DATA SHEET CONTINUATION

PROJECT NAME & SITE #	I-10 Corridor CAGN	Date: 4 / 17 / 13	Page No. 2

VEGETATION COMMUNITIES

Species	Dominance*	Community	Species	Dominance*	Community

* 1 = individual, 2 = rare, 3 = frequent, 4 = common, 5 = abundant

WILDLIFE COMMUNITIES

Species	Sign*	Species	Sign*
CORA	O		

* B = burrow, C = carcass, Fe = feathers, Fu = fur, N = nest, O = observed, S = scat, T = tracks, V = vocalization

cagn field data sheets

PROTOCOL SURVEY DATA SHEET
for Coastal California Gnatcatcher
(*Polioptila californica californica*)

PROJECT NAME:	I-10 Corridor	PROJECT #:	2013-01[illegible]

GENERAL DATA		WEATHER DATA	
Date: 4 | 26 | 13	Survey #: 2	Air temp. (F at 6" above surface in the shade)	
Surveyor(s): Shannan Shaffer		Start: 58	End: 68
		Daily High:	Daily Low:
		Cloud cover (%):	50 | 15
Time Start: 0855	End: 1135	Precipitation [ ] yes	[X] no
Total Length of Survey:		Est. wind speed (mph):	3-5
Measurement of survey area:		Est. wind direction:	

Coastal California Gnatcatcher Observations

Bird ID should be identified on accompanying map. GPS points should be taken in UTM, Zone 11 S, NAD83, Meters

Time	ID	Sex	Activity	Northing	Easting
			NO CAGN Detected		

Other forms needed for this site [ ] photo log [ ] CNDDB form

cagn field data sheets

FIELD DATA SHEET CONTINUATION

PROJECT NAME & SITE #	I-10 Corridor CAGN	Date: 4/26/13	Page No. 2

VEGETATION COMMUNITIES

Species	Dominance*	Community	Species	Dominance*	Community

* 1 = individual, 2 = rare, 3 = frequent, 4 = common, 5 = abundant

WILDLIFE COMMUNITIES

Species	Sign*	Species	Sign*
BUSH			
AMCR			
BLPH			
RODI			

* B = burrow, C = carcass, Fe = feathers, Fu = fur, N = nest, O = observed, S = scat, T = tracks, V = vocalization

cagn field data sheets

PROTOCOL SURVEY DATA SHEET
for Coastal California Gnatcatcher
(*Polioptila californica californica*)

PROJECT NAME:	I-10 Corridor	PROJECT #:	2013-01[illegible]

GENERAL DATA		WEATHER DATA	
Date: 5/3/13 Survey #: 3		Air temp. (F at 6" above surface in the shade)	
Surveyor(s): Shannan Shaffer		Start: 74	End: 78
		Daily High:	Daily Low:
		Cloud cover (%): 0	
Time Start: 0855	End: 1135	Precipitation [ ] yes [X] no	
Total Length of Survey:		Est. wind speed (mph): 1-5	
Measurement of survey area:		Est. wind direction:	

Coastal California Gnatcatcher Observations

Bird ID should be identified on accompanying map. GPS points should be taken in UTM, Zone 11 S, NAD83, Meters

Time	ID	Sex	Activity	Northing	Easting
			NO CAGN Detected		

Other forms needed for this site [ ] photo log [ ] CNDDB form

cagn field data sheets

FIELD DATA SHEET CONTINUATION

PROJECT NAME & SITE #	I-10 Corridor CAGN	Date: 5/3/13	Page No. 2

VEGETATION COMMUNITIES

Species	Dominance*	Community	Species	Dominance*	Community

* 1 = individual, 2 = rare, 3 = frequent, 4 = common, 5 = abundant

WILDLIFE COMMUNITIES

Species	Sign*	Species	Sign*
CORA			
BLPH			
HOFI			
MODU			
NOMO			
WSJA			

* B = burrow, C = carcass, Fe = feathers, Fu = fur, N = nest, O = observed, S = scat, T = tracks, V = vocalization

cagn field data sheets

PROTOCOL SURVEY DATA SHEET
for Coastal California Gnatcatcher
(*Polioptila californica californica*)

PROJECT NAME:	I-10 Corridor	PROJECT #:	2013-010

GENERAL DATA		WEATHER DATA	
Date: 5/17/13	Survey #: 4	Air temp. (F at 6" above surface in the shade)	
Surveyor(s): Shannan Shaffer		Start: 55	End: 58
		Daily High:	Daily Low:
		Cloud cover (%): 100	
Time Start: 0855	End: 1135	Precipitation [ ] yes	[X] no
Total Length of Survey:		Est. wind speed (mph):	3-7
Measurement of survey area:		Est. wind direction:	

Coastal California Gnatcatcher Observations

Bird ID should be identified on accompanying map. GPS points should be taken in UTM, Zone 11 S, NAD83, Meters

Time	ID	Sex	Activity	Northing	Easting
			NO CAGN Detected		

Other forms needed for this site [ ] photo log [ ] CNDDB form

cagn field data sheets

FIELD DATA SHEET CONTINUATION

PROJECT NAME & SITE #	I-10 Corridor CAGN	Date: 5/17/13	Page No. 2

VEGETATION COMMUNITIES

Species	Dominance*	Community	Species	Dominance*	Community

* 1 = individual, 2 = rare, 3 = frequent, 4 = common, 5 = abundant

WILDLIFE COMMUNITIES

Species	Sign*	Species	Sign*
NOMO	V		
CALT	O V		
BLPH	O		
AMCR	O		

* B = burrow, C = carcass, Fe = feathers, Fu = fur, N = nest, O = observed, S = scat, T = tracks, V = vocalization

cagn field data sheets

PROTOCOL SURVEY DATA SHEET
for Coastal California Gnatcatcher
(*Polioptila californica californica*)

PROJECT NAME: I-10 Corridor	PROJECT #: 2013-010

GENERAL DATA	WEATHER DATA	
Date: 5/29/13 Survey #: 5	Air temp. (F at 6" above surface in the shade)	
Surveyor(s): Shannan Shaffer	Start: 67	End: 76
	Daily High:	Daily Low:
	Cloud cover (%): 70/0	
Time Start: 0835 End: 1050	Precipitation [ ] yes [X] no	
Total Length of Survey:	Est. wind speed (mph): 2-5	
Measurement of survey area:	Est. wind direction:	

Coastal California Gnatcatcher Observations

Bird ID should be identified on accompanying map. GPS points should be taken in UTM, Zone 11 S, NAD83, Meters

Time	ID	Sex	Activity	Northing	Easting
			NO CAGN Detected		

Other forms needed for this site [ ] photo log [ ] CNDDB form

cagn field data sheets

FIELD DATA SHEET CONTINUATION

PROJECT NAME & SITE #	I-10 Corridor CAGN	Date: 5/29/13	Page No. 2

VEGETATION COMMUNITIES

Species	Dominance*	Community	Species	Dominance*	Community

* 1 = individual, 2 = rare, 3 = frequent, 4 = common, 5 = abundant

WILDLIFE COMMUNITIES

Species	Sign*	Species	Sign*
ANHU	O		
CORA	O V		
AMCR	O V		
ROPI	O		
NOMO	V		
BLPH	O		
RTHA	O		

* B = burrow, C = carcass, Fe = feathers, Fu = fur, N = nest, O = observed, S = scat, T = tracks, V = vocalization

cagn field data sheets

PROTOCOL SURVEY DATA SHEET
for Coastal California Gnatcatcher
(*Polioptila californica californica*)

PROJECT NAME: I-10 Corridor	PROJECT #: 2013-01[illegible]

GENERAL DATA	WEATHER DATA	
Date: 6/20/13 Survey #: 6	Air temp. (F at 6" above surface in the shade)	
Surveyor(s): Shannan Shaffer	Start: 72	End: 86
	Daily High:	Daily Low:
	Cloud cover (%): 0	
Time Start: 0900 End: 1150	Precipitation [ ] yes [X] no	
Total Length of Survey:	Est. wind speed (mph): 0-2	
Measurement of survey area:	Est. wind direction: E	

Coastal California Gnatcatcher Observations

Bird ID should be identified on accompanying map. GPS points should be taken in UTM, Zone 11 S, NAD83, Meters

Time	ID	Sex	Activity	Northing	Easting
			NO CAGN Detected		

Other forms needed for this site [ ] photo log [ ] CNDDB form

cagn field data sheets

FIELD DATA SHEET CONTINUATION

PROJECT NAME & SITE #	I-10 Corridor CAGN	Date: 6/20/13	Page No. 2

VEGETATION COMMUNITIES

Species	Dominance*	Community	Species	Dominance*	Community

* 1 = individual, 2 = rare, 3 = frequent, 4 = common, 5 = abundant

WILDLIFE COMMUNITIES

Species	Sign*	Species	Sign*
HOFI	OV		
HOSP	OV		
MODO	O		
BLPH	O		

* B = burrow, C = carcass, Fe = feathers, Fu = fur, N = nest, O = observed, S = scat, T = tracks, V = vocalization

cagn field data sheets

This page intentionally left blank.

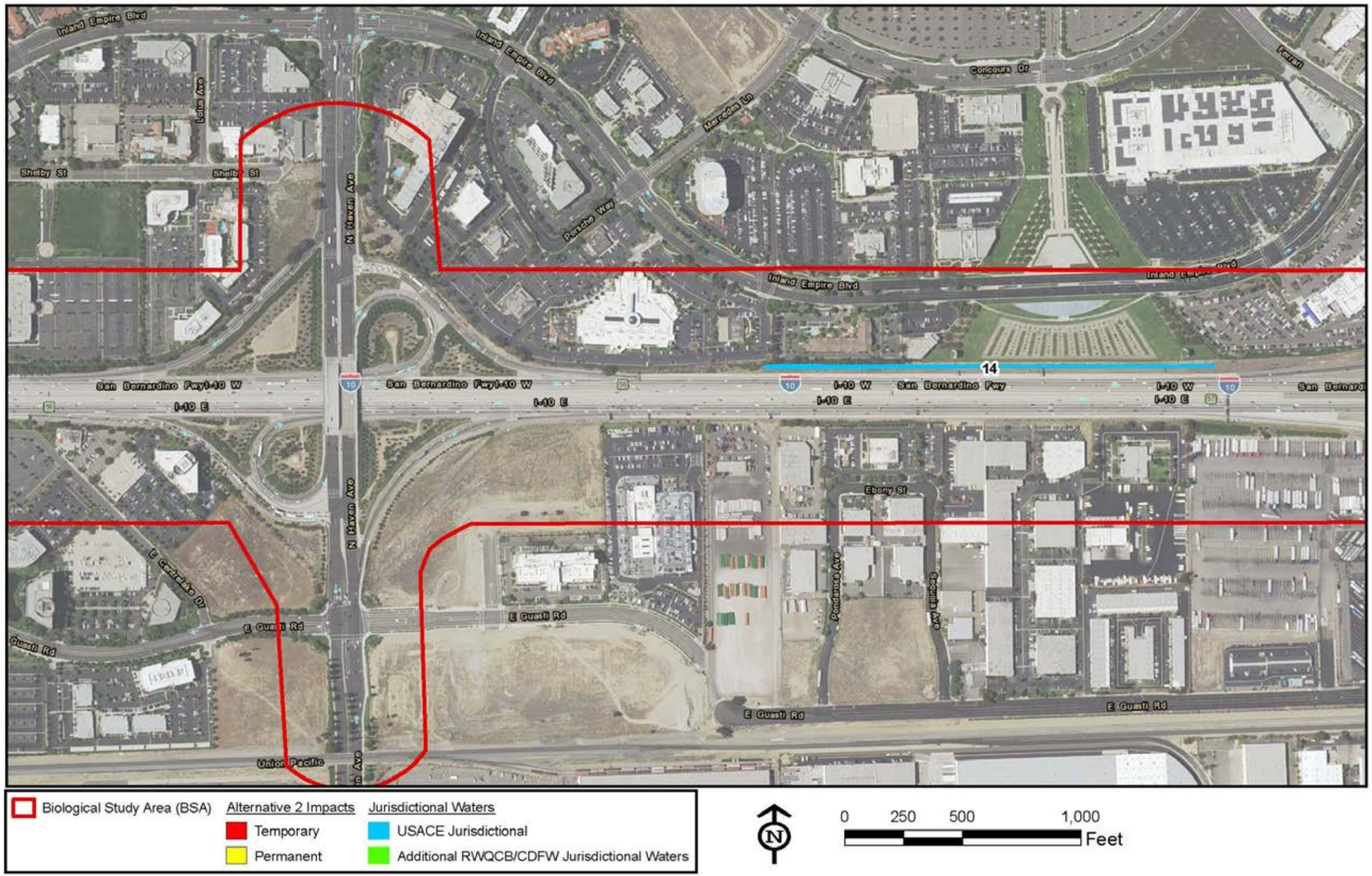
Appendix E Jurisdictional Delineation Report

The Jurisdictional Delineation Report is provided in this submittal under separate cover.

This page intentionally left blank.

Appendix F Jurisdictional Waters Impact Mapping for Alternative 2

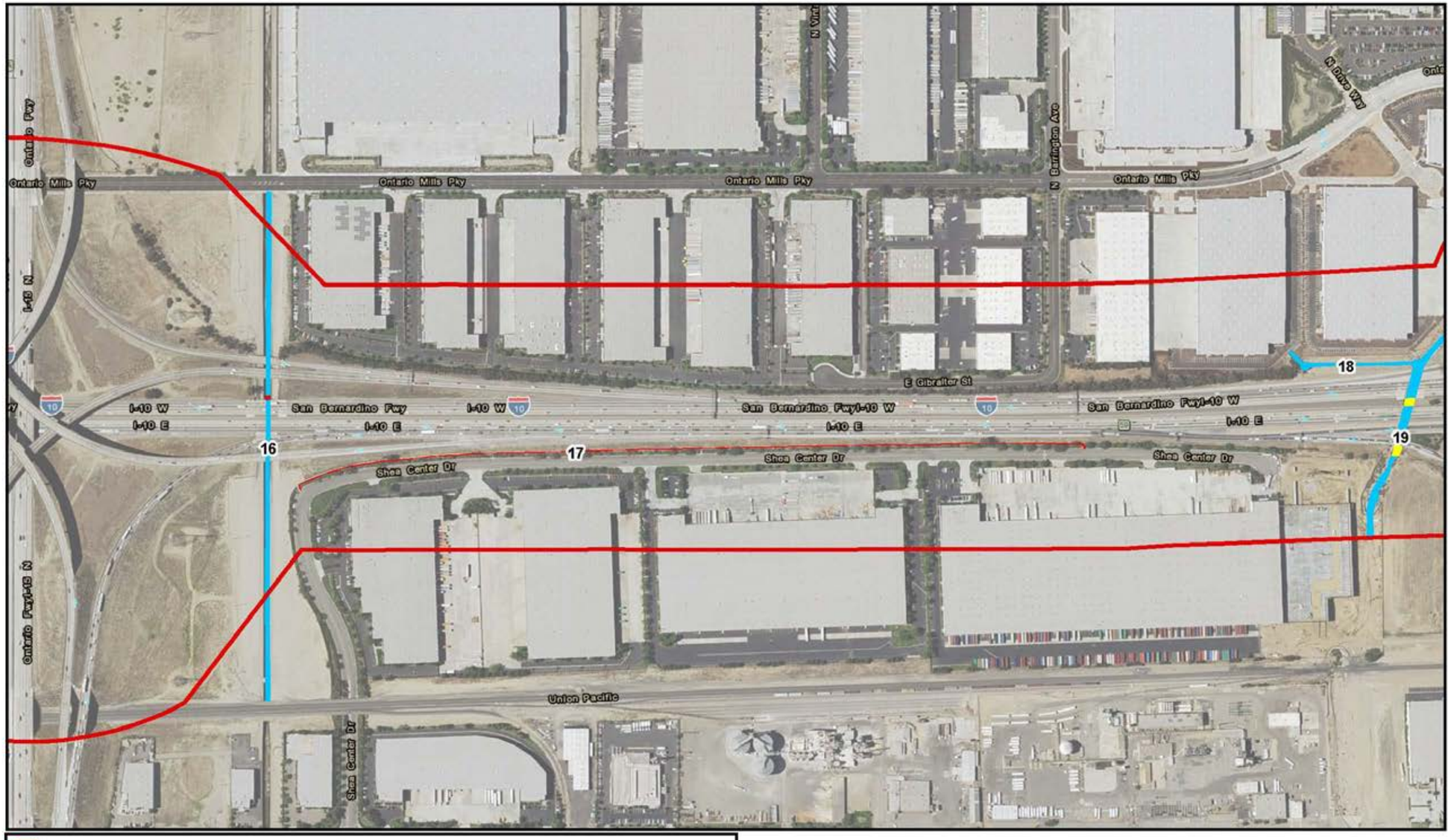
This page intentionally left blank.


Inland Empire Blvd
Lotus Ave
Shelby St
N Haven Ave
Porsche Way
Mercedes Ln
Concours Dr
Ferrari
14
San Bernardino Fwy I-10 W
I-10 E
Ebony St
Pendleton Ave
Spruce Ave
E Guasti Rd
Guasti Rd
E Centralia Dr
Union Pacific
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0 250 500 1,000
Feet

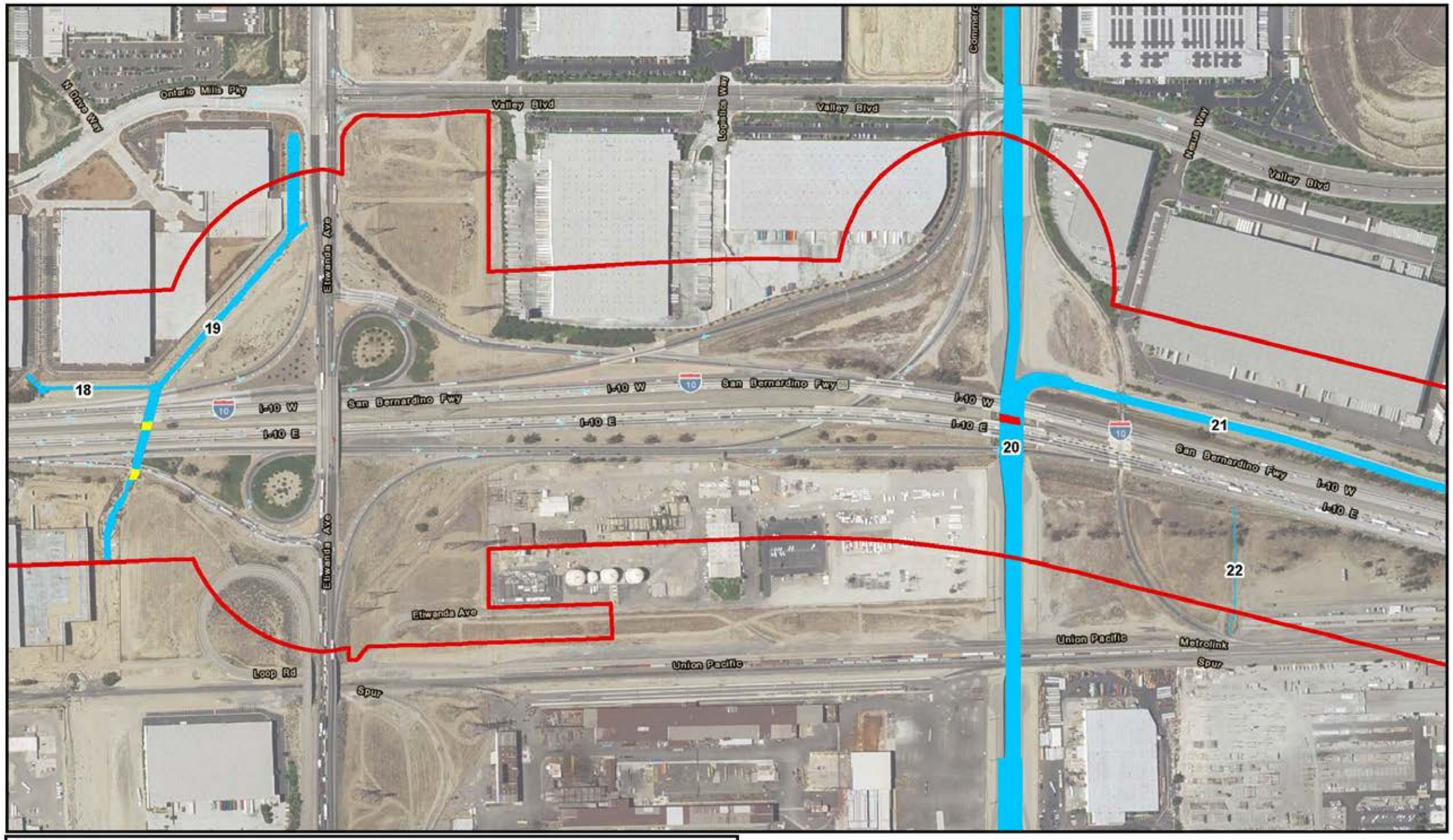
This page intentionally left blank.


Inland Empire Blvd
Mall Dr
Mills Cir
N Milliken Ave
Franklin Ave
S Ontario Mills Dr
Rancho Ave
Ontario Mills Pky
I-15 S
I-15 N
15
San Bernardino Fwy
I-10 W
I-10 E
E Guasti Rd
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

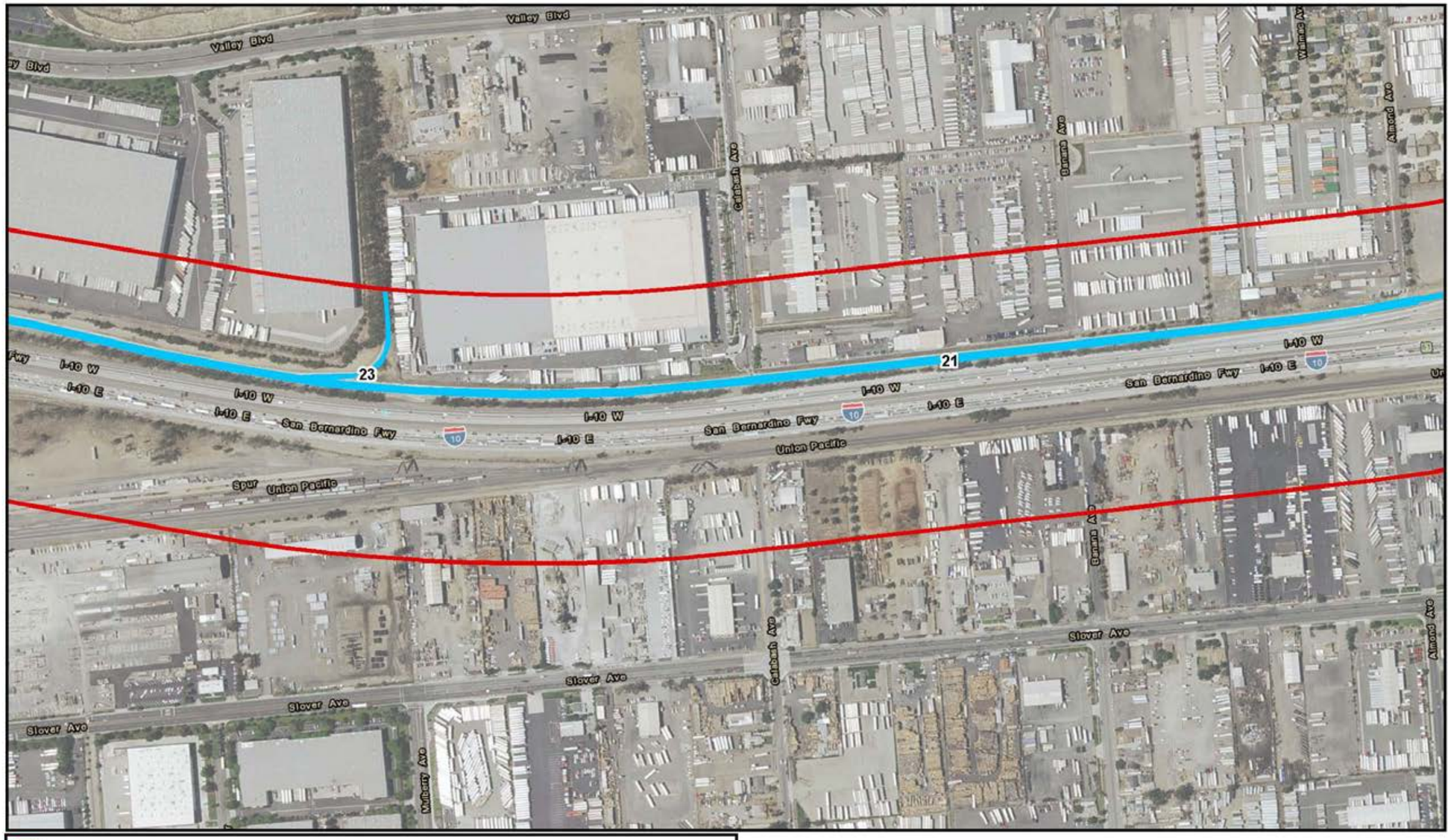
This page intentionally left blank.


Ontario Mills Pky
Ontario Mills Pky
Ontario Mills Pky
Ontario Mills Pky
N Vineyard Ave
N Barrington Ave
N Dove Way
Ontario Pky
I-15 N
I-10 W
I-10 E
San Bernardino Fwy
I-10 W
I-10 E
San Bernardino Fwy I-10 W
I-10 E
San Bernardino Fwy I-10 W
I-10 E
E Gibraltar St
16
17
18
19
Shea Center Dr
Shea Center Dr
Shea Center Dr
Ontario Fwy I-15 N
Union Pacific
Shea Center Dr
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

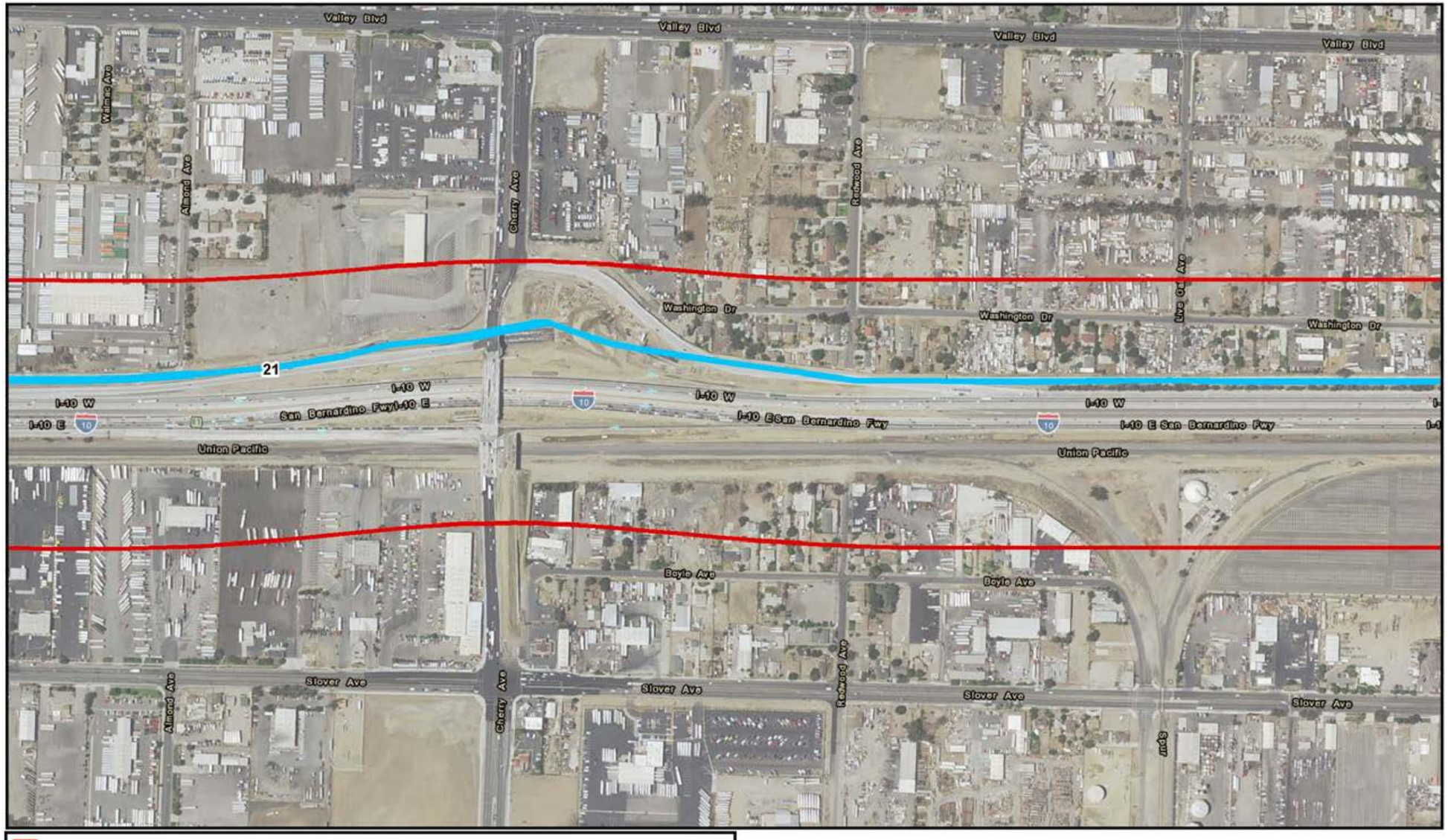
This page intentionally left blank.


N Davis Way
Ontario Mills Pky
Valley Blvd
Logistics Way
Valley Blvd
Commerce
Nuevo Way
Valley Blvd
Etiwanda Ave
19
18
I-10 W
I-10 E
San Bernardino Fwy
I-10 W
I-10 E
San Bernardino Fwy
I-10 W
I-10 E
20
21
22
Etiwanda Ave
Loop Rd
Union Pacific
Spur
Union Pacific
Metrolink
Spur
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

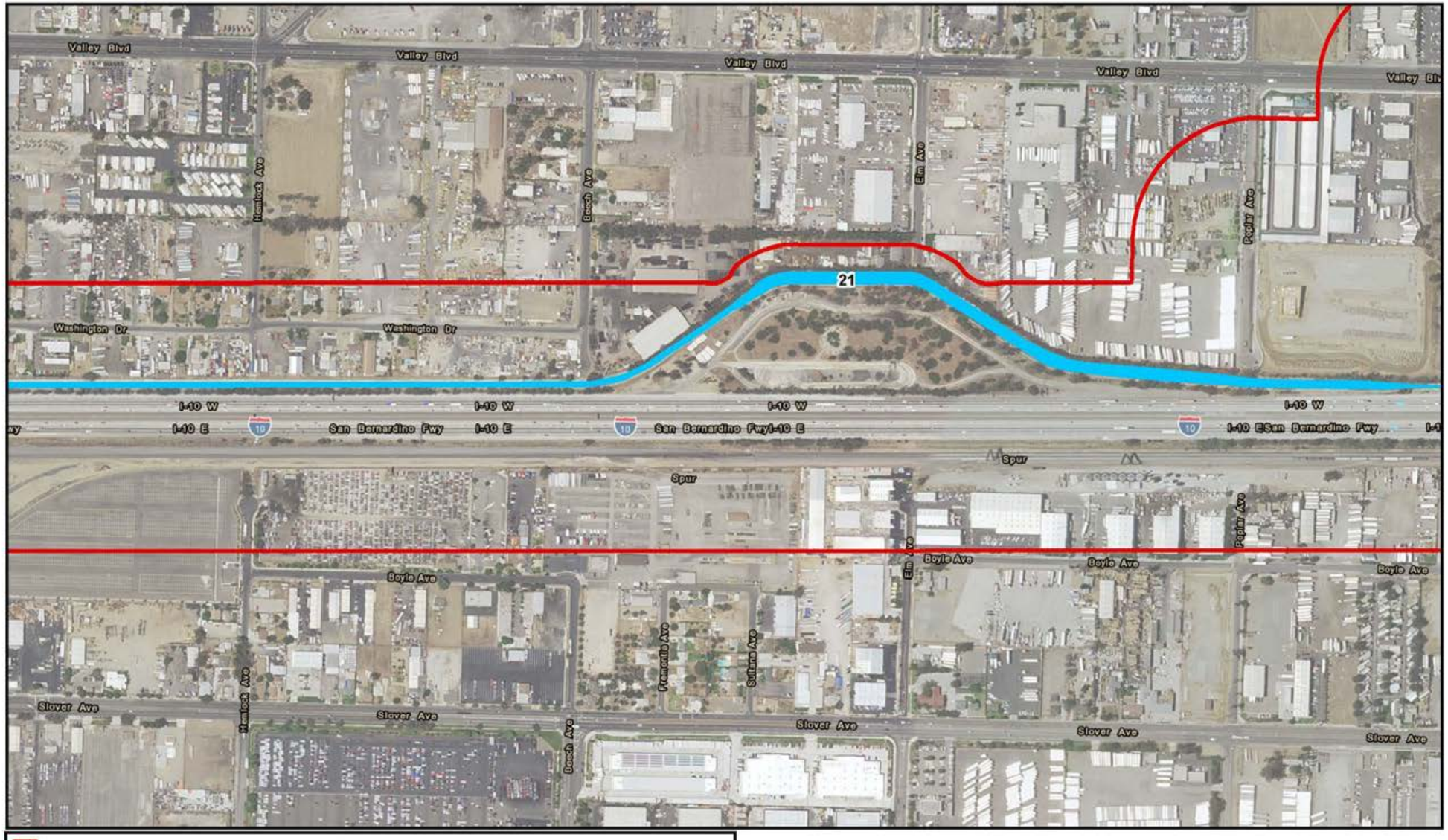
This page intentionally left blank.


Valley Blvd
Valley Blvd
Cabbish Ave
Banana Ave
Walnut Ave
Almond Ave
23
21
I-10 W
I-10 E
San Bernardino Fwy
Union Pacific
Spur Union Pacific
Slover Ave
Slover Ave
Slover Ave
Cabbish Ave
Mulberry Ave
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

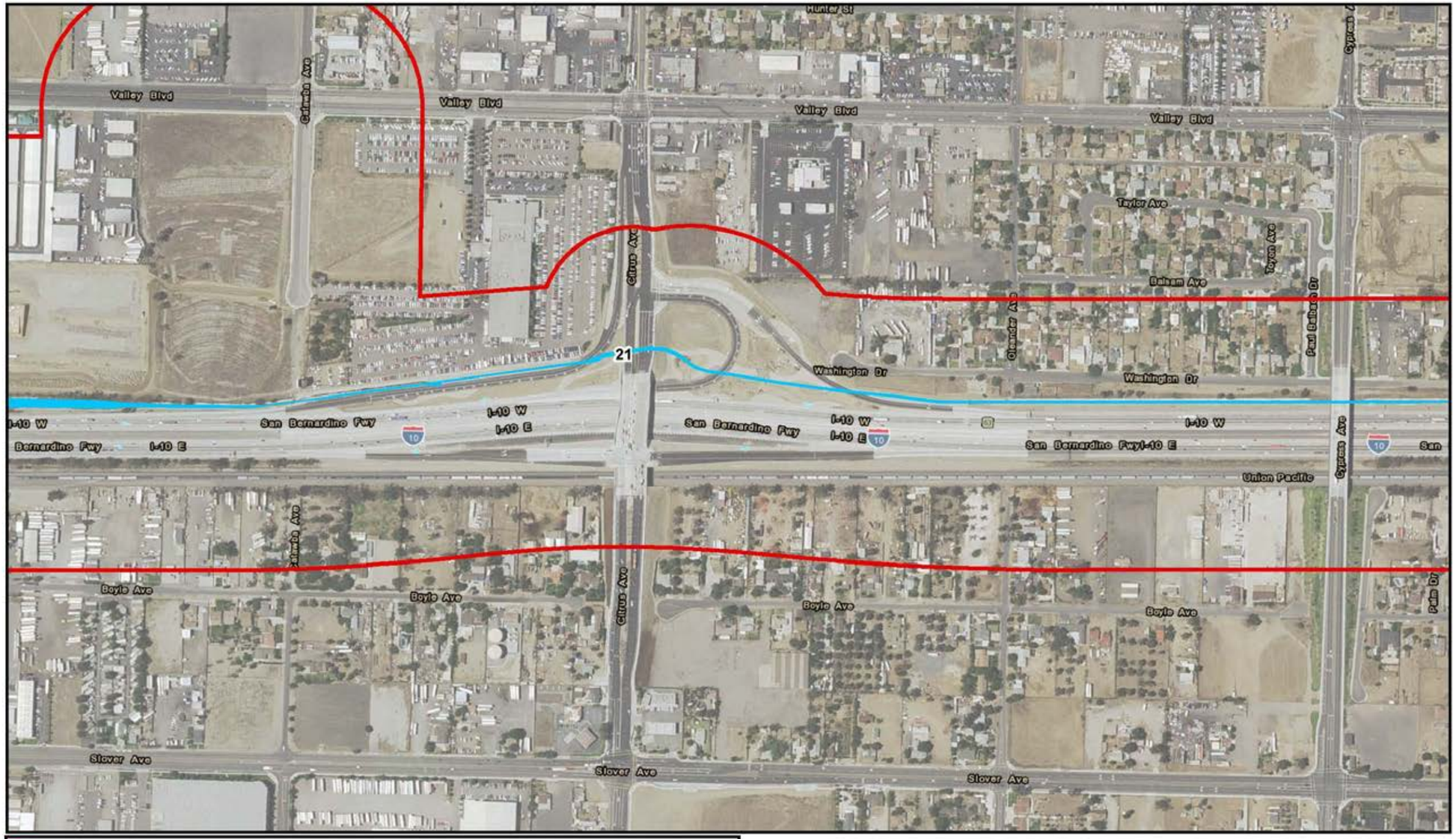
This page intentionally left blank.


Valley Blvd
Valley Blvd
Valley Blvd
Valley Blvd
Wilma Ave
Almond Ave
Cherry Ave
Redwood Ave
Live Oak Ave
Washington Dr
Washington Dr
Washington Dr
21
I-10 W
I-10 E
San Bernardino Fwy
I-10 W
I-10 E
San Bernardino Fwy
I-10 W
I-10 E San Bernardino Fwy
Union Pacific
Union Pacific
Boyle Ave
Boyle Ave
Slover Ave
Slover Ave
Slover Ave
Slover Ave
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

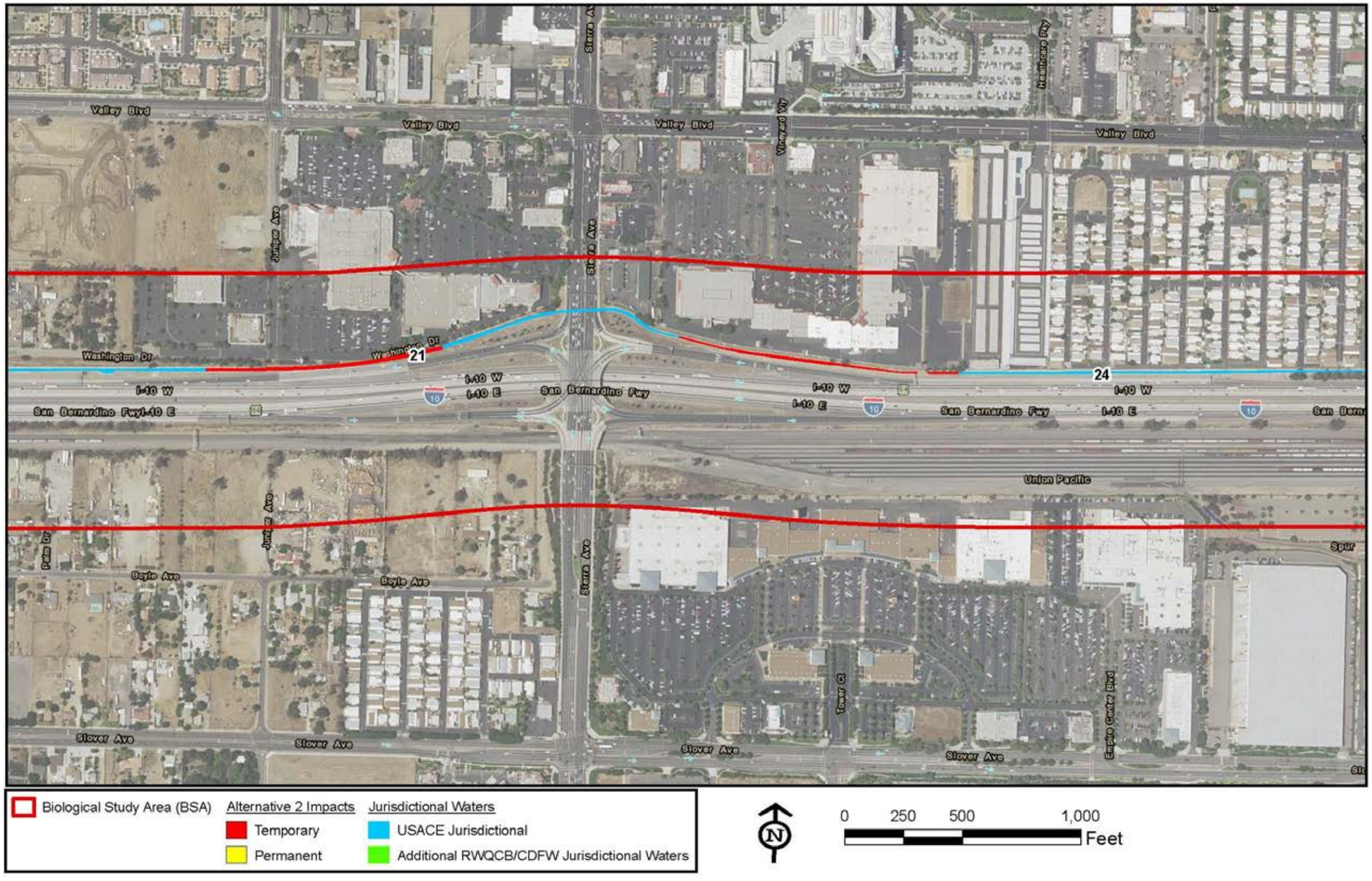
This page intentionally left blank.


Valley Blvd
Hemlock Ave
Beech Ave
Elm Ave
Poplar Ave
21
Washington Dr
I-10 W
I-10 E
San Bernardino Fwy
Spur
Boyle Ave
Fremontia Ave
Sultana Ave
Slover Ave
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

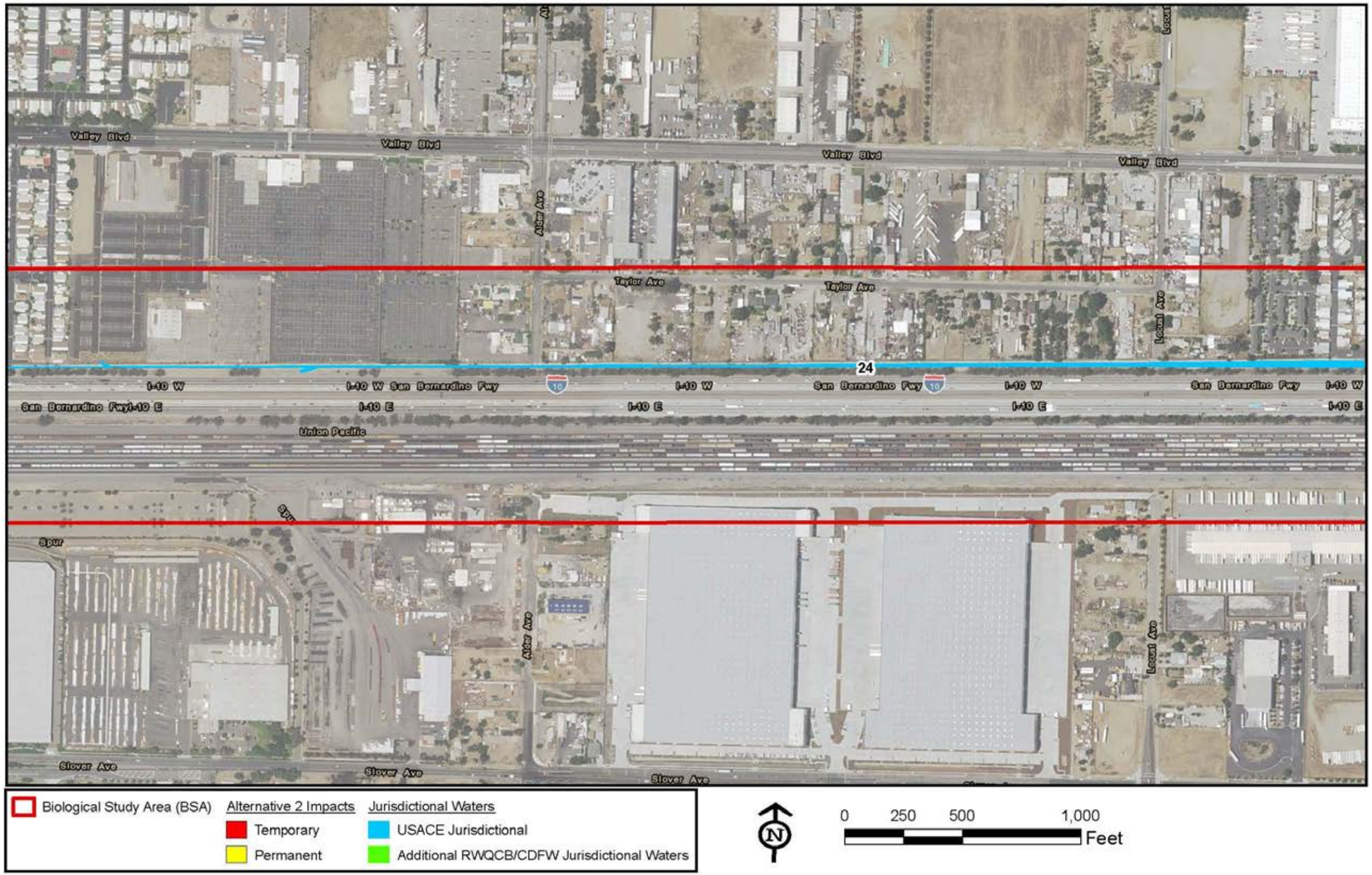
This page intentionally left blank.


Hunter St
Valley Blvd
Cedarpines Ave
Valley Blvd
Valley Blvd
Valley Blvd
Taylor Ave
Tayon Ave
Balsam Ave
Citrus Ave
Oleander Ave
Washington Dr
Washington Dr
21
I-10 W
San Bernardino Fwy
I-10 E
I-10 W
I-10 E
San Bernardino Fwy
I-10 W
I-10 E
I-10 W
San Bernardino Fwy
I-10 E
Cypress Ave
Union Pacific
Cedarpines Ave
Boyle Ave
Boyle Ave
Citrus Ave
Boyle Ave
Boyle Ave
Slover Ave
Slover Ave
Slover Ave
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

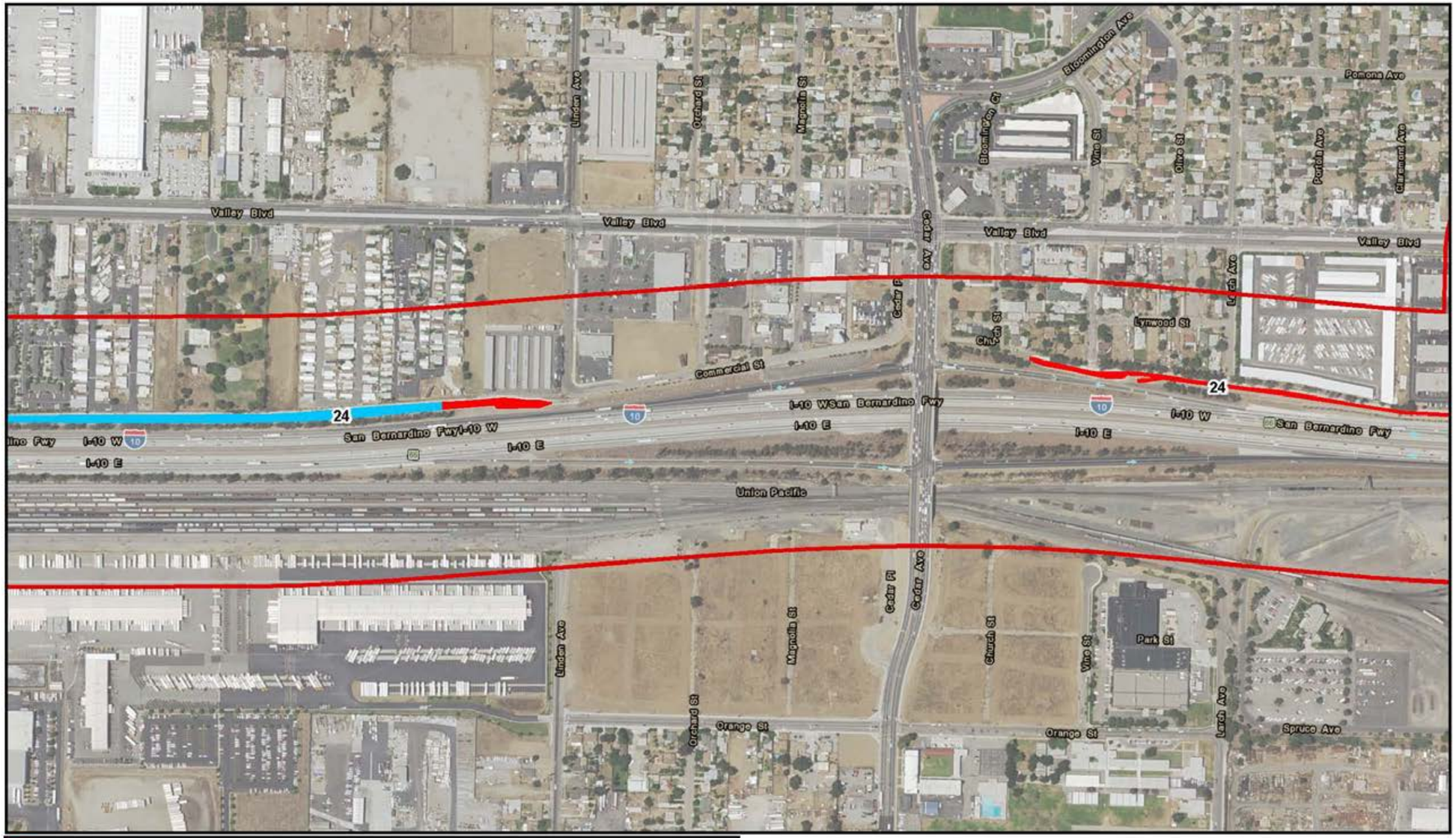
This page intentionally left blank.


Valley Blvd
Valley Blvd
Valley Blvd
Valley Blvd
Juniper Ave
Sierra Ave
Vineyard Vly
Healthcare Pky
Washington Dr
21
24
I-10 W
I-10 E
San Bernardino Fwy
Union Pacific
Spur
Palm Dr
Boyle Ave
Slover Ave
Tower Ct
Empire Center Blvd
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

This page intentionally left blank.


Valley Blvd
Valley Blvd
Valley Blvd
Valley Blvd
Alder Ave
Locust Ave
Taylor Ave
Taylor Ave
24
I-10 W
I-10 W San Bernardino Fwy
I-10 W
San Bernardino Fwy
I-10 W
San Bernardino Fwy
I-10 W
San Bernardino Fwy
I-10 E
I-10 E
I-10 E
I-10 E
I-10 E
Union Pacific
Spur
Spur
Alder Ave
Locust Ave
Slover Ave
Slover Ave
Slover Ave
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

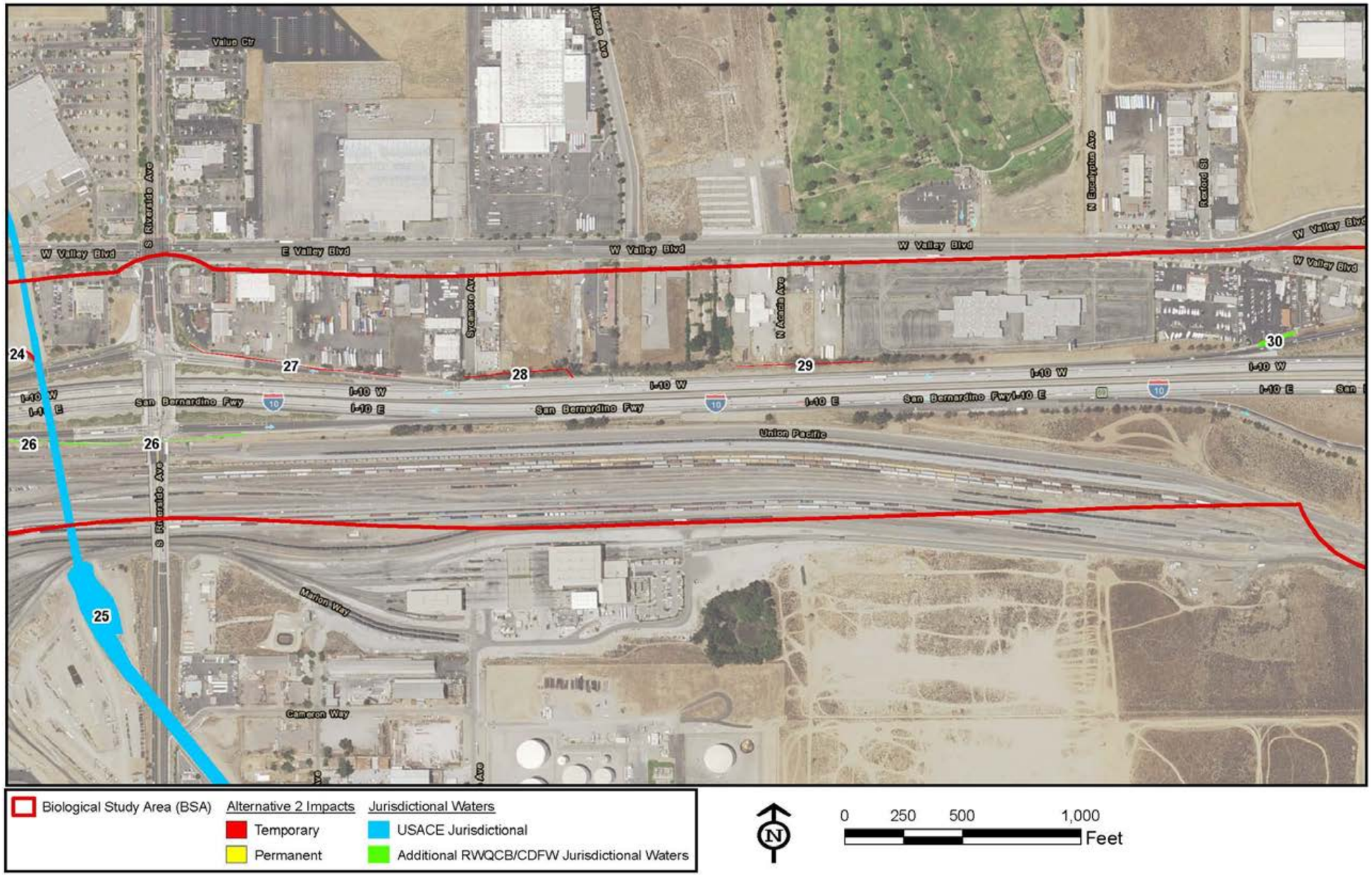
This page intentionally left blank.


Valley Blvd
Valley Blvd
Valley Blvd
Valley Blvd
Commercial St
24
I-10 W
I-10 E
San Bernardino Fwy
Union Pacific
Orange St
Orange St
Spruce Ave
Park St
Linden Ave
Orchard St
Magnolia St
Cedar Pl
Cedar Ave
Church St
Vine St
Olive St
Lemon St
Lynwood St
Bloomington Ave
Pomona Ave
Claremont Ave
Larch Ave
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

This page intentionally left blank.


W Pomona St
W Pomona Ave
W Valley Blvd
W Valley Blvd
W Valley Blvd
W Valley B
S Cactus Ave
S Lilac Ave
S Willow Ave
Spruce Ave
Blvd
24
I-10 W
I-10 E
San Bernardino Fwy
I-10 W
I-10 E
San Bernardino Fwy
I-10 W
I-10 E
San Bernardino Fwy
I-10 W
I-10 E
San Bernardino Fwy
26
26
25
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

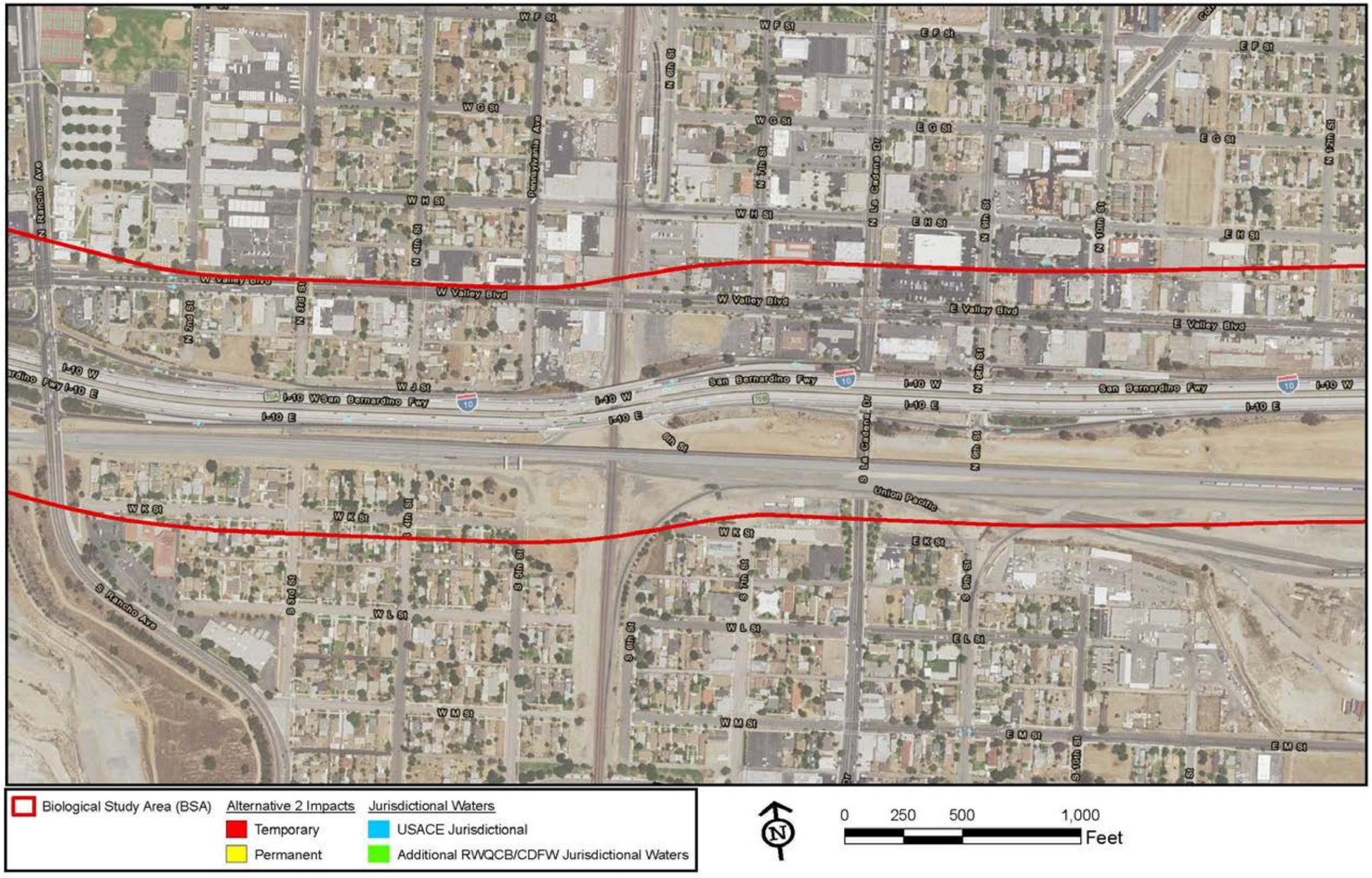
This page intentionally left blank.


Value Ctr
Tippecanoe Ave
S Riverside Ave
W Valley Blvd
E Valley Blvd
W Valley Blvd
W Valley Blvd
W Valley Blvd
Sycamore Ave
N Acacia Ave
N Eucalyptus Ave
Redford St
24
25
26
26
27
28
29
30
I-10 W
I-10 E
San Bernardino Fwy
I-10 W
I-10 E
San Bernardino Fwy
I-10 W
I-10 E
San Bernardino Fwy
I-10 W
I-10 E
Union Pacific
Marion Way
Cameron Way
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

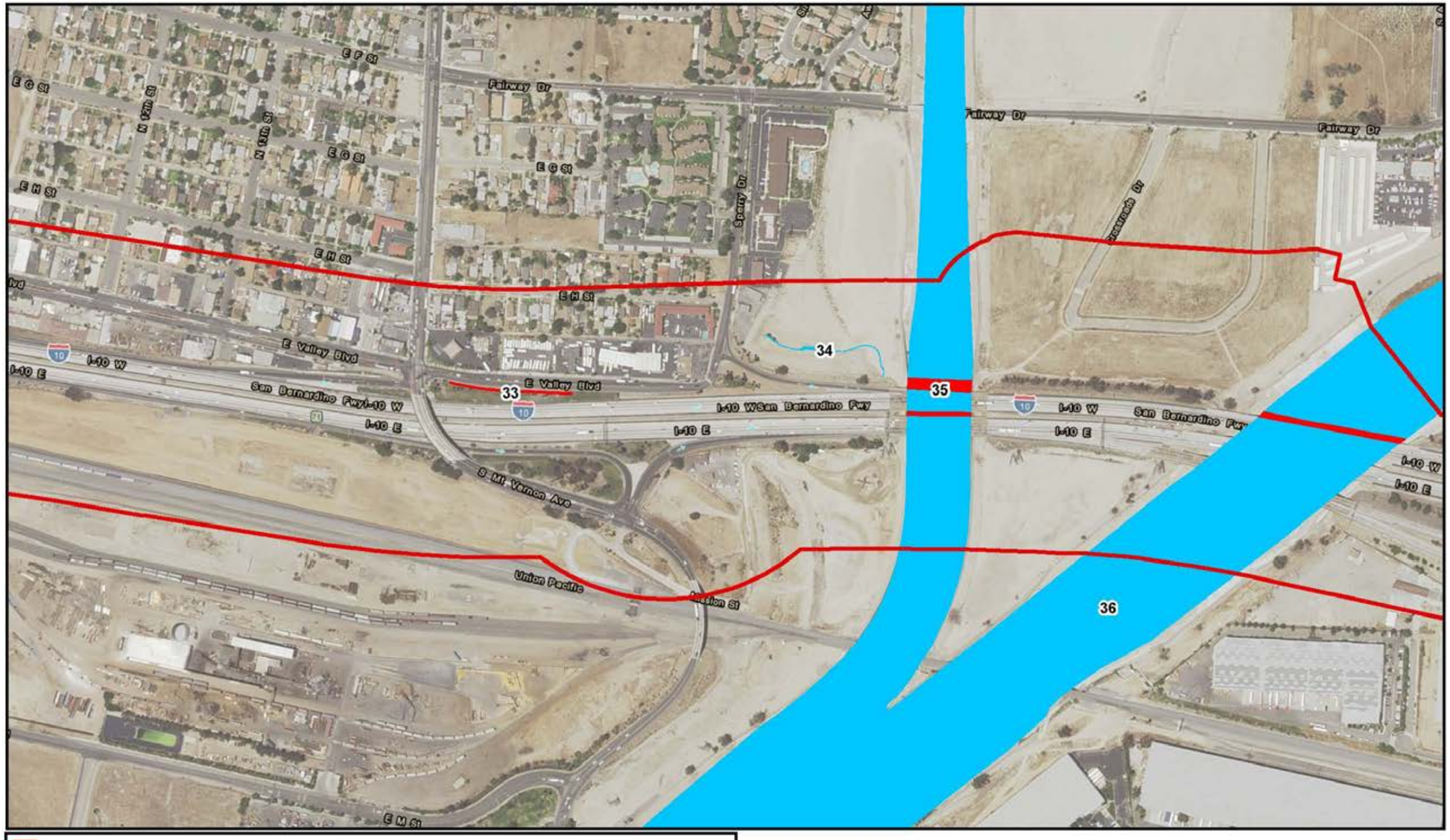
This page intentionally left blank.


Blue Dr
Green Cir
Plum Pl
Pepper Ave
Meridian Ave
W Valley Blvd
30
31
32
I-10 W
I-10 E
San Bernardino Fwy
Nemoca Ave
Jackson St
W F St
W G St
Kelly Ln
Grand Ave
W H St
Rancho Ave
Union Pacific
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

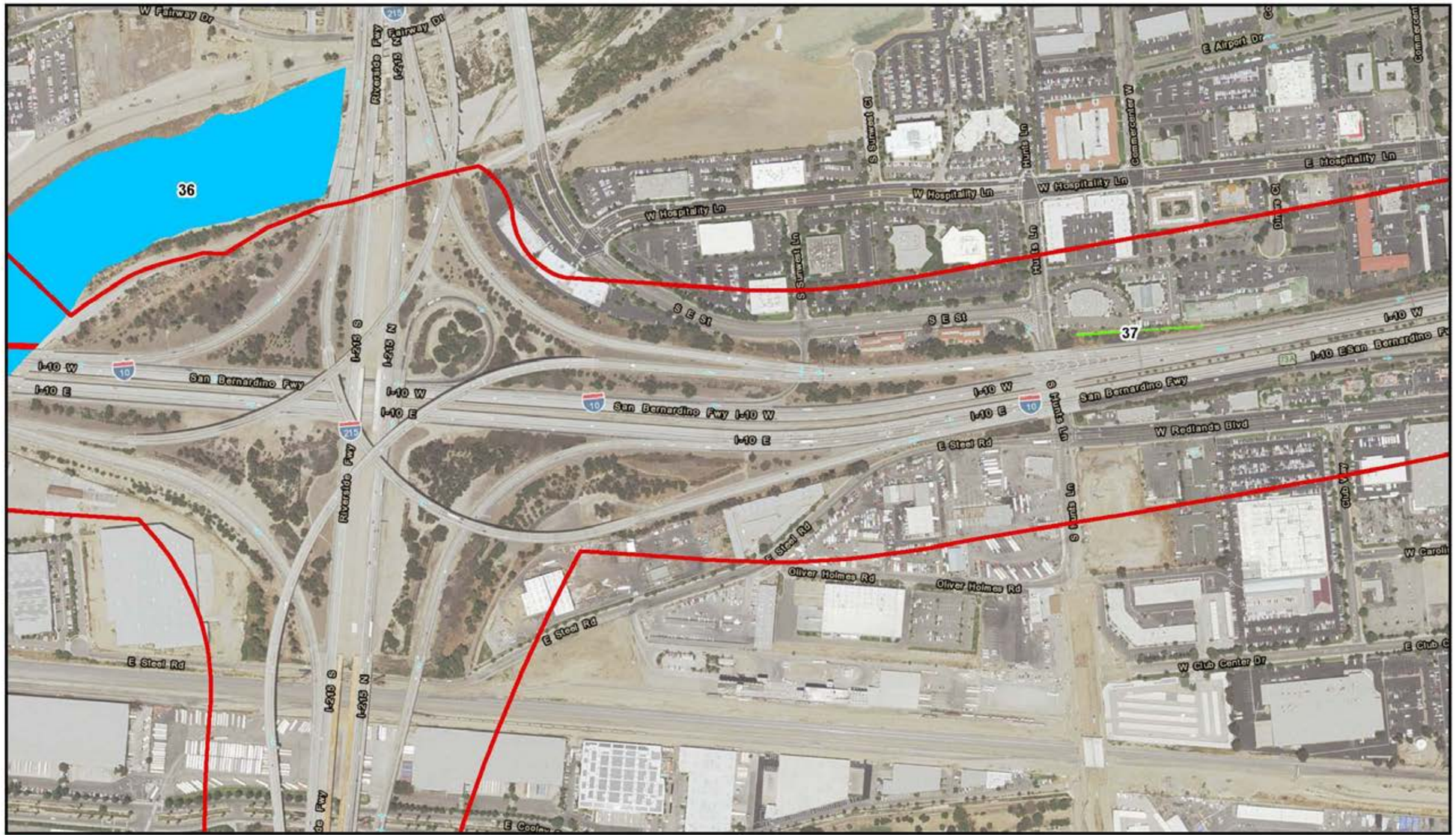
This page intentionally left blank.


W F St
W G St
W H St
W Valley Blvd
W J St
I-10 W/San Bernardino Fwy
I-10 W
I-10 E
W K St
W L St
W M St
N Rancho Ave
S Rancho Ave
N Pennsylvania Ave
N 4th St
N 5th St
N 6th St
N 7th St
La Cadena Dr
N 8th St
N 10th St
N 12th St
E F St
E G St
E H St
E Valley Blvd
San Bernardino Fwy
E K St
E L St
E M St
Union Pacific
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
0
250
500
1,000
Feet

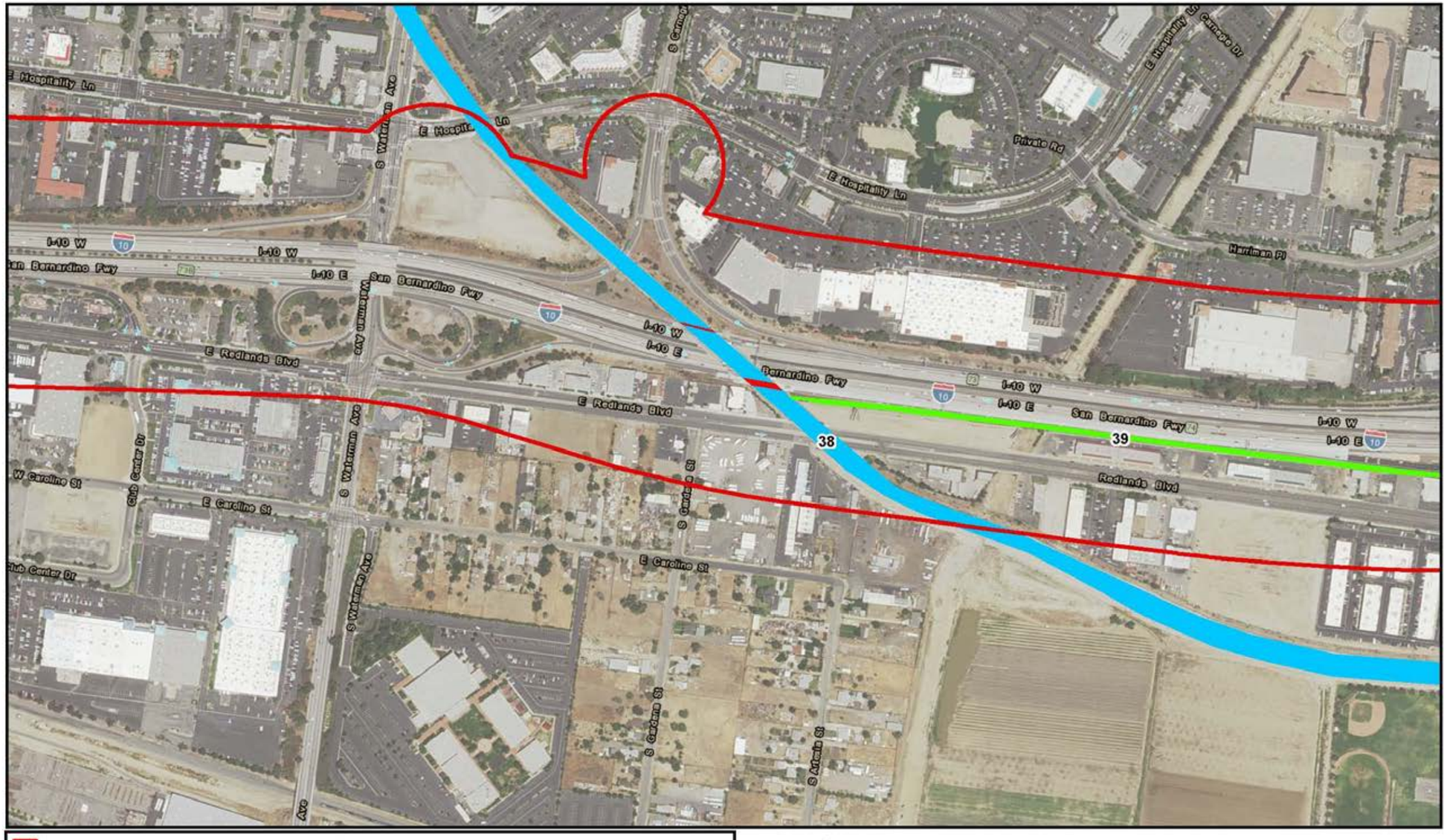
This page intentionally left blank.


E F St
E G St
N Mt Vernon Ave
E H St
Fairway Dr
Sperry Dr
Fairway Dr
Fairway Dr
Fairway Dr
E Valley Blvd
I-10 W
I-10 E
San Bernardino Fwy
33
34
35
36
S Mt Vernon Ave
Union Pacific
E M St
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

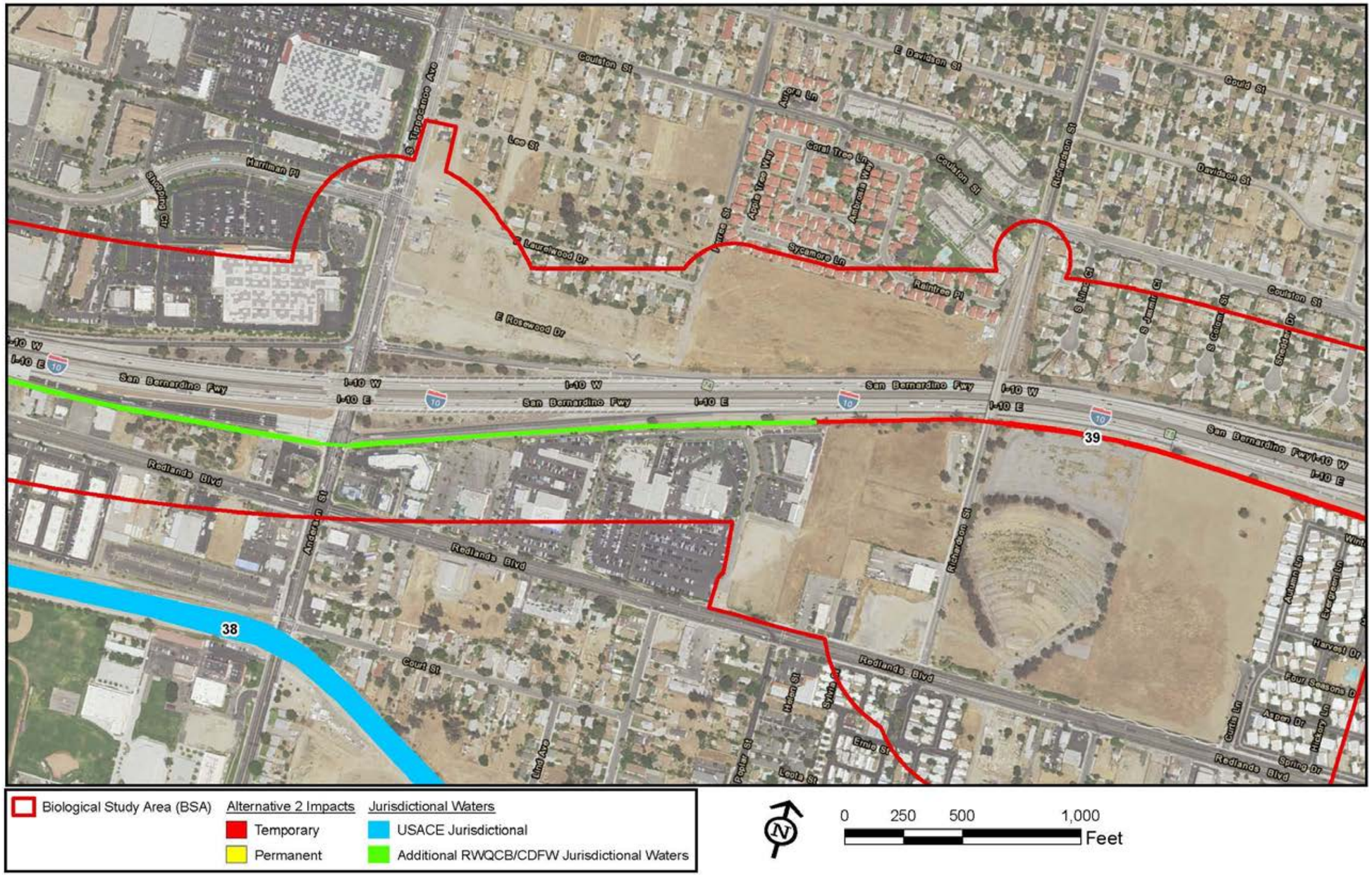
This page intentionally left blank.


36
37
W Fairway Dr
Riverside Fwy
I-215
S Sunset Ct
Hunts Ln
Commercenter W
E Airport Dr
W Hospitality Ln
E Hospitality Ln
S E St
I-10 W
I-10 E
San Bernardino Fwy
I-215 S
I-215 N
E Steel Rd
Oliver Holmes Rd
W Redlands Blvd
W Club Center Dr
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

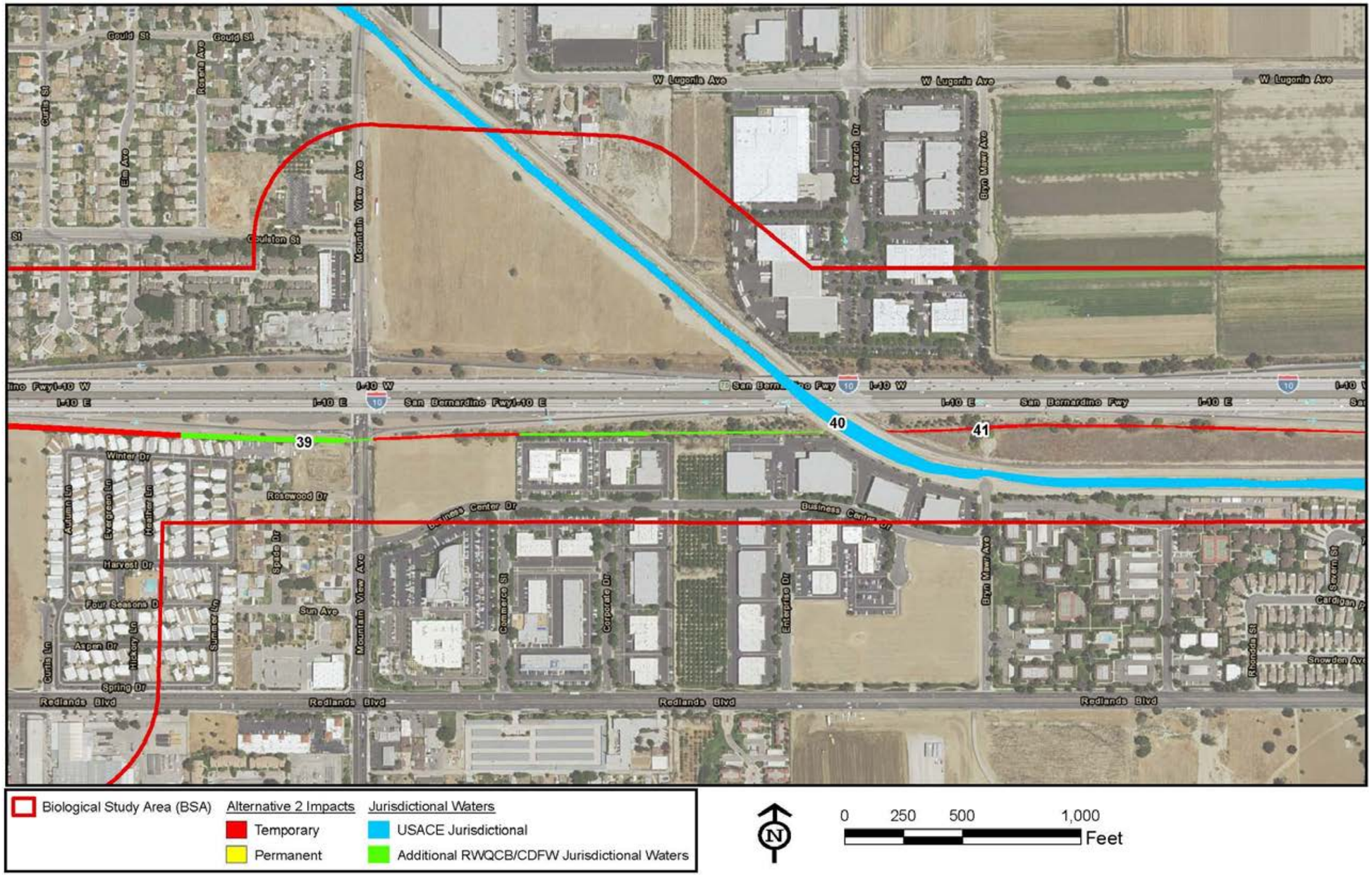
This page intentionally left blank.


E Hospitality Ln
S Waterman Ave
E Hospitality Ln
S Carnegie Dr
E Hospitality Ln
Private Rd
Harriman Pl
I-10 W
I-10 E
San Bernardino Fwy
E Redlands Blvd
Bernardino Fwy
38
39
Redlands Blvd
W Caroline St
Club Center Dr
E Caroline St
S Waterman Ave
S Garden St
S Arlelia St
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

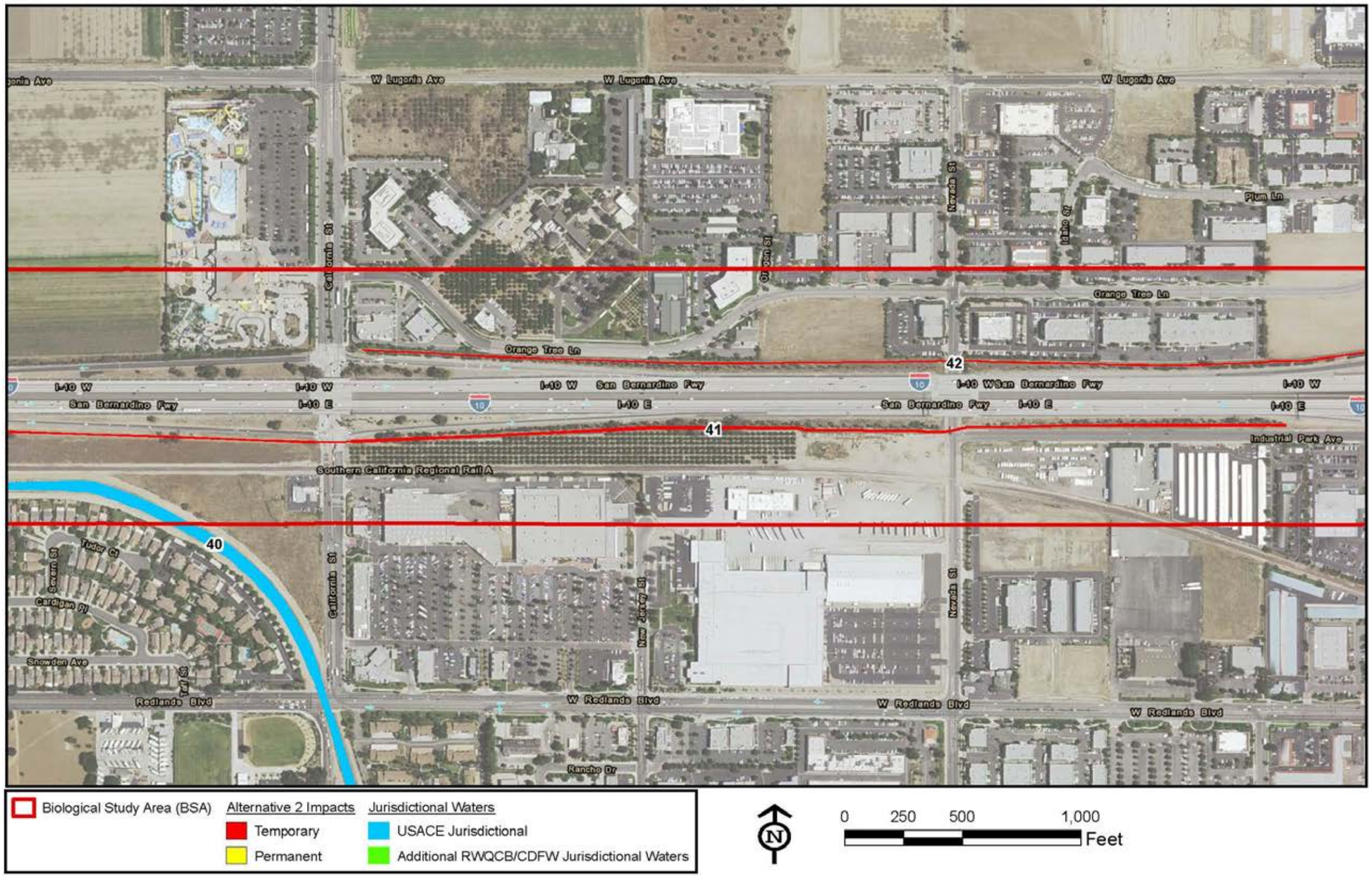
This page intentionally left blank.


Coulston St
E Davidson St
Gould St
S Tippecanoe Ave
Low St
Harriman Pl
Shopping Cir
Laurelwood Dr
Apple Tree Way
Coral Tree Ln
Ambrosia Way
Sycamore Ln
Raintree Pl
Davidson St
Coulston St
E Rosewood Dr
I-10 W
I-10 E
San Bernardino Fwy
39
Redlands Blvd
Anderson St
38
Court St
Lind Ave
Ernie St
Leota St
Spring Dr
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

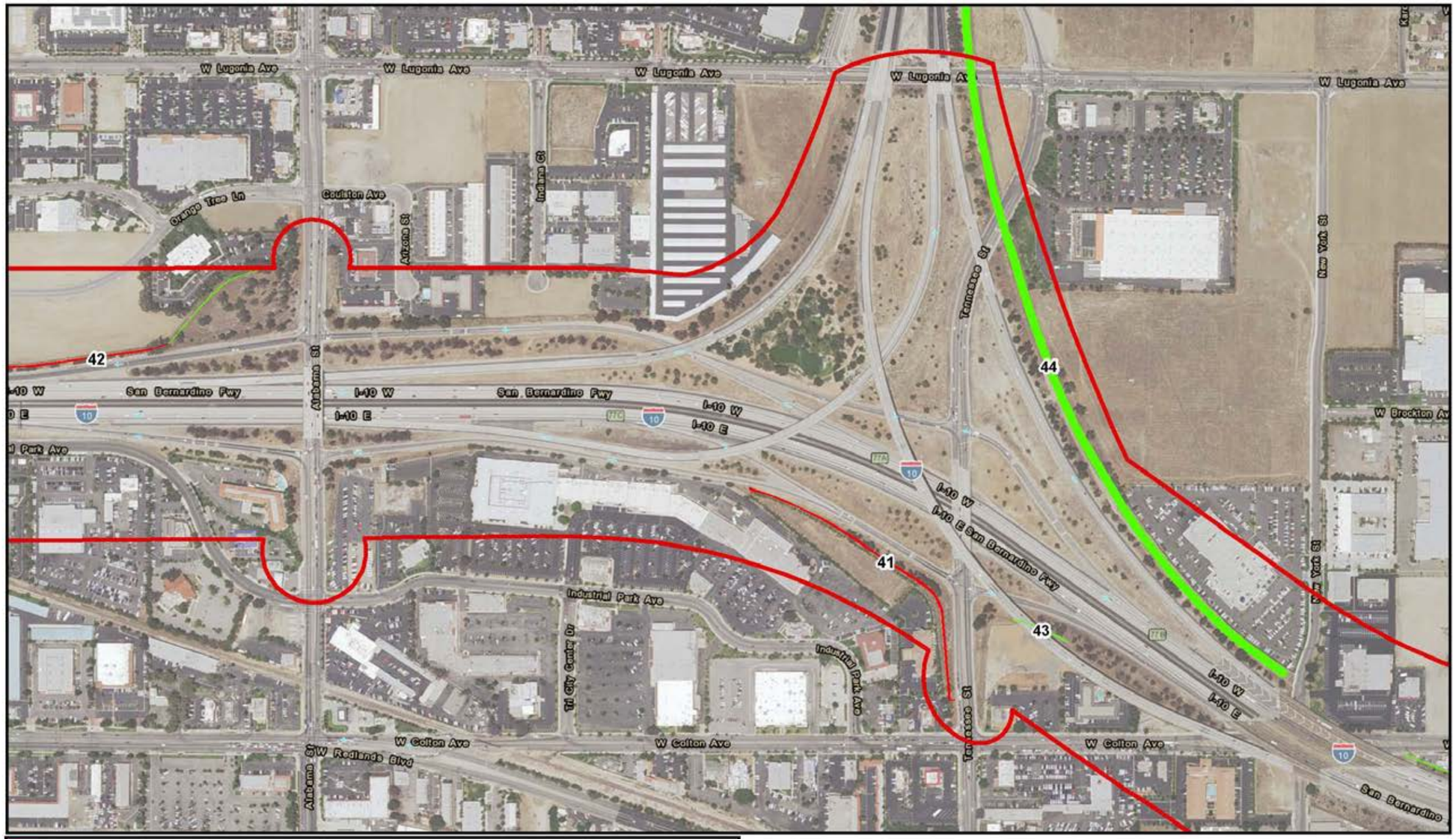
This page intentionally left blank.


Gould St
Gould St
Reservoir Ave
Curtis St
Elm Ave
W Lugonia Ave
W Lugonia Ave
W Lugonia Ave
Research Dr
Bryn Mawr Ave
Mountain View Ave
Coulston St
I-10 W
I-10 E
San Bernardino Fwy I-10 E
I-10 W
I-10 E
San Bernardino Fwy
I-10 E
40
41
39
Winter Dr
Autumn Ln
Evergreen Ln
Heather Ln
Rosewood Dr
Business Center Dr
Business Center Dr
Spade Dr
Harvest Dr
Four Seasons Dr
Sun Ave
Summer Ln
Commerce St
Corporate Dr
Enterprise Dr
Bryn Mawr Ave
Severn St
Cardigan Ave
Aspen Dr
Hickory Ln
Curtis Ln
Spring Dr
Rhondda St
Snowden Ave
Redlands Blvd
Redlands Blvd
Redlands Blvd
Redlands Blvd
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

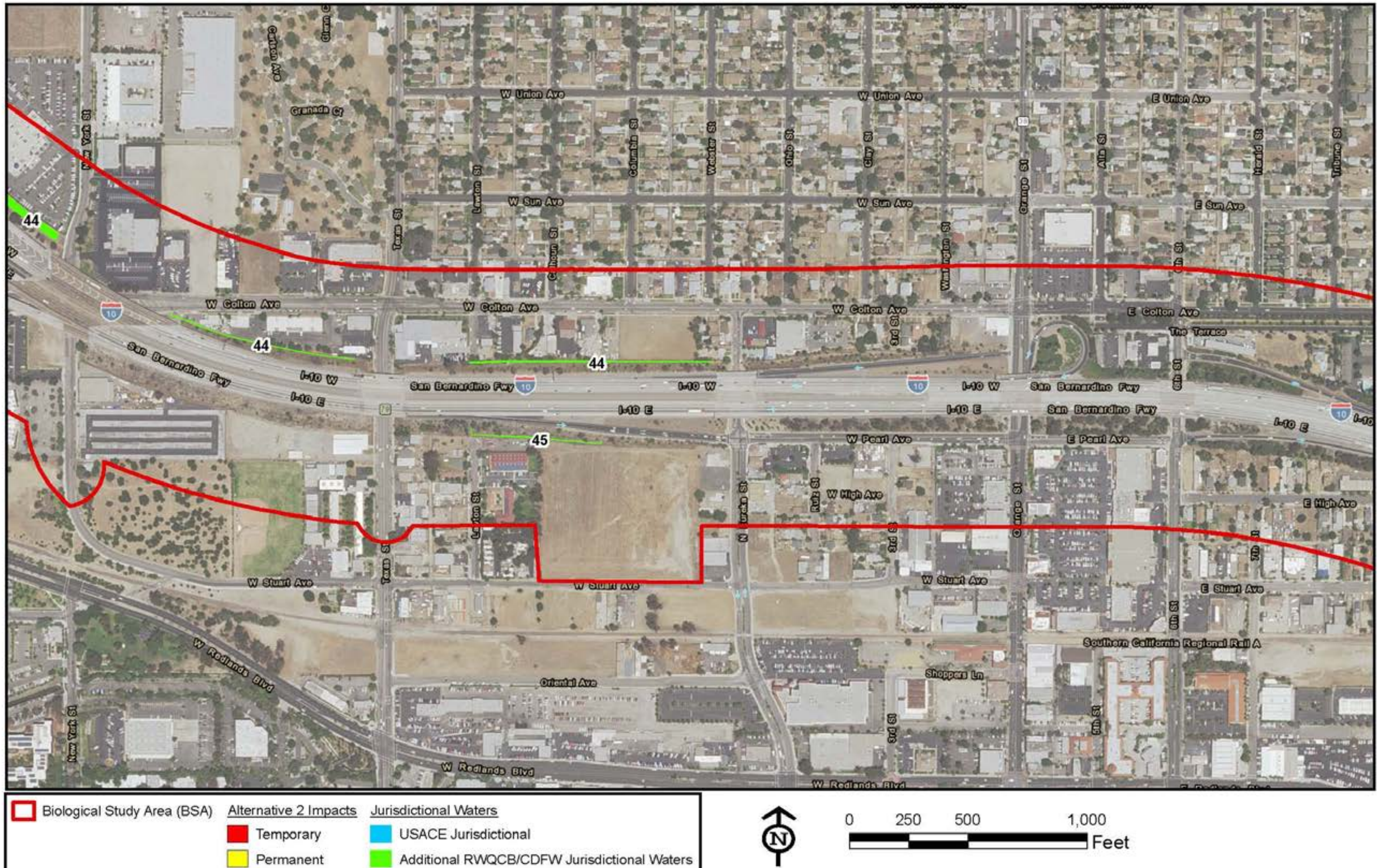
This page intentionally left blank.


W Lugonia Ave
W Lugonia Ave
W Lugonia Ave
California St
Nevada St
Orange Tree Ln
Plum Ln
Orange Tree Ln
42
I-10 W
San Bernardino Fwy
I-10 E
41
Southern California Regional Rail A
Industrial Park Ave
40
Tudor Ct
Sycamore St
Cardigan Pl
Snowden Ave
Redlands Blvd
New Jersey St
Rancho Dr
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

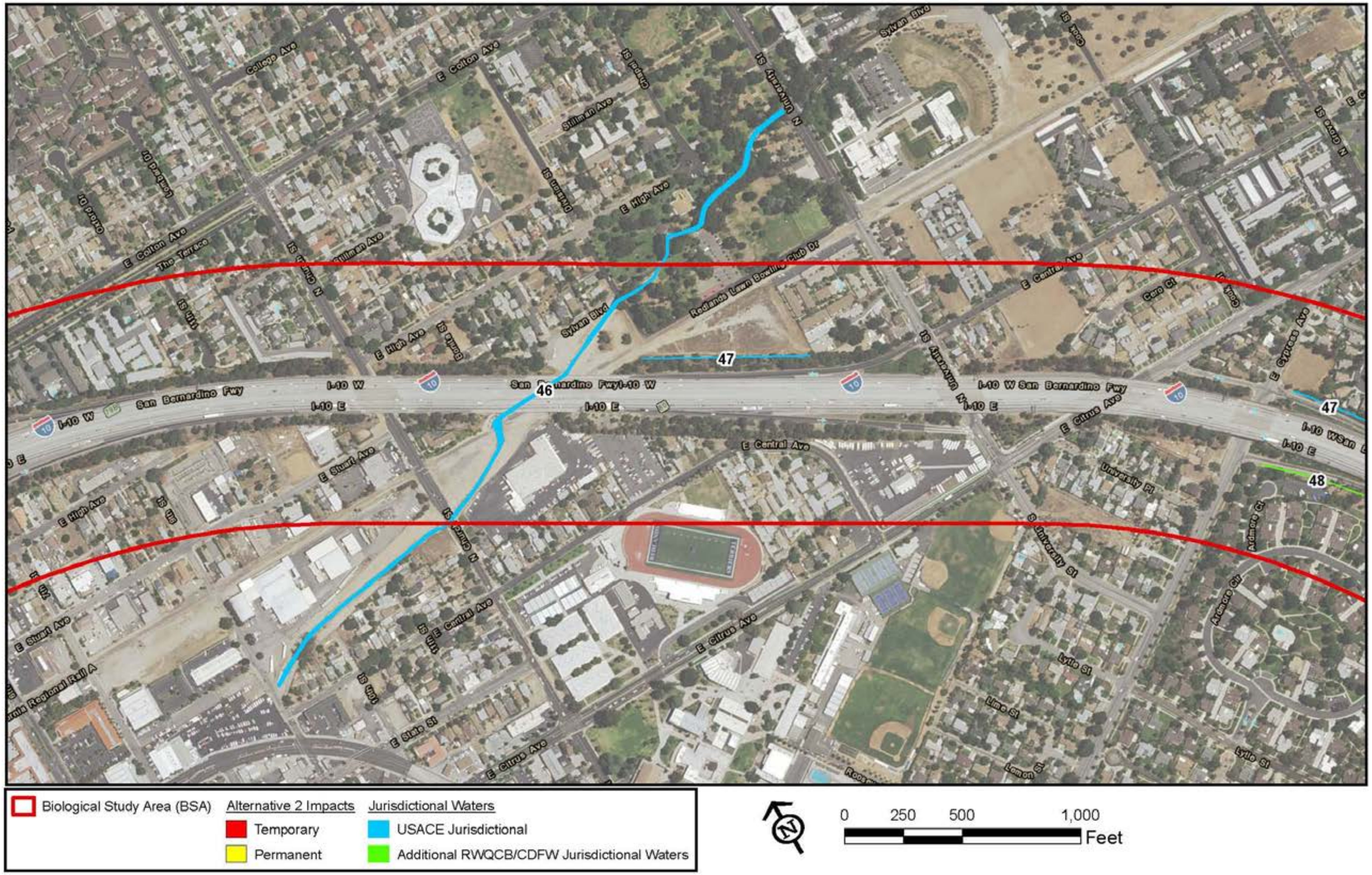
This page intentionally left blank.


W Lugonia Ave
Orange Tree Ln
Coulston Ave
Indiana Ct
Arizona St
Tennessee St
New York St
42
44
41
43
I-10 W
I-10 E
San Bernardino Fwy
Alabama St
Industrial Park Ave
Tri City Center Dr
W Colton Ave
W Redlands Blvd
W Brockton Av
San Bernardino
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

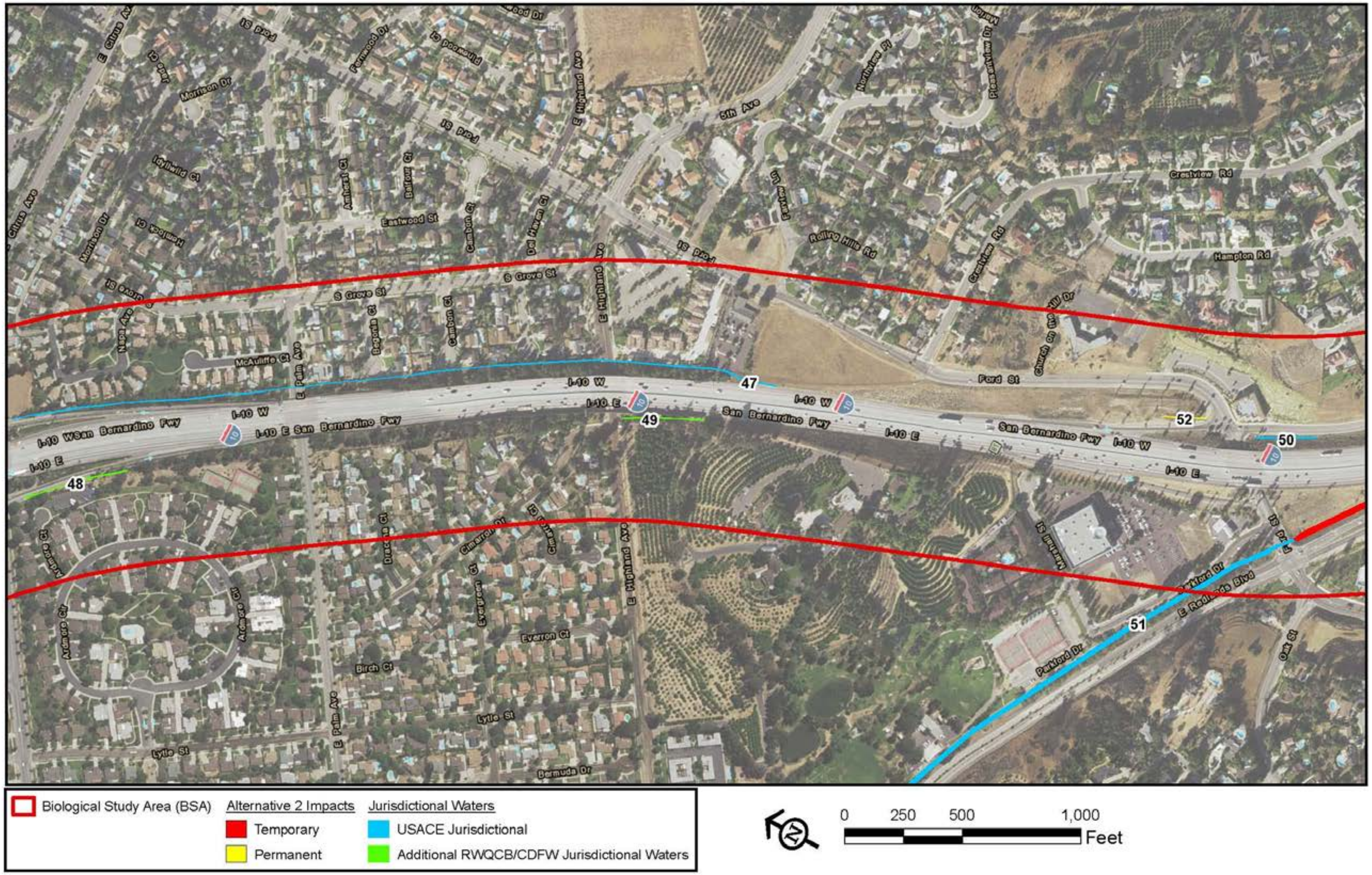
This page intentionally left blank.


W Union Ave
E Union Ave
Granada Ct
Carlson Ave
New York St
Lawton St
Columbia St
Webster St
Ohio St
Clay St
Orange St
Alta St
Herald St
Tribune St
Texas St
Calhoun St
Washington St
6th St
W Sun Ave
E Sun Ave
44
W Colton Ave
E Colton Ave
The Terrace
3rd St
San Bernardino Fwy
I-10 W
I-10 E
45
W Pearl Ave
E Pearl Ave
W High Ave
E High Ave
Ruiz St
N Eureka St
7th St
W Stuart Ave
E Stuart Ave
Southern California Regional Rail A
W Redlands Blvd
Oriental Ave
Shoppers Ln
5th St
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

This page intentionally left blank.


College Ave
E Colton Ave
The Terrace
Lombard Dr
Oxford Dr
N Church St
Stillman Ave
11th St
E High Ave
Chapel St
Division St
N University St
Sylvan Blvd
Redlands Lawn Bowling Club Dr
Bonita St
Cook St
N Grove St
E Central Ave
Cero Ct
E Cypress Ave
I-10 W
I-10 E
San Bernardino Fwy
San Bernardino FwyI-10 W
I-10 W San Bernardino Fwy
E Citrus Ave
E Stuart Ave
University Pl
S University St
Ardmore Ct
Ardmore Cir
Lytle St
Lime St
Lemon St
E State St
10th St
46
47
48
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

This page intentionally left blank.


Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
0
250
500
1,000
Feet
47
48
49
50
51
52
I-10 W
I-10 E
San Bernardino Fwy
E Citrus Ave
Morrison Dr
Idyllwild Ct
Hemlock Ct
Ford St
Fernwood Dr
Pinewood Ct
E Highland Ave
5th Ave
Northview Pl
Pleasantview Dr
Amherst Ct
Balfour Ct
Eastwood St
Cambon Ct
Del Haven Ct
Fairview Ln
Rolling Hills Rd
Crestview Rd
Hampton Rd
S Grove St
Napa Ave
Begonia Ct
McAuliffe Ct
E Palm Ave
Ardmore Ct
Ardmore Cir
Dracena Ct
Cimarron Dr
Evergreen Ct
Everron Ct
Birch Ct
Lytle St
Bermuda Dr
Marshall St
Parkford Dr
E Redlands Blvd
Oak St

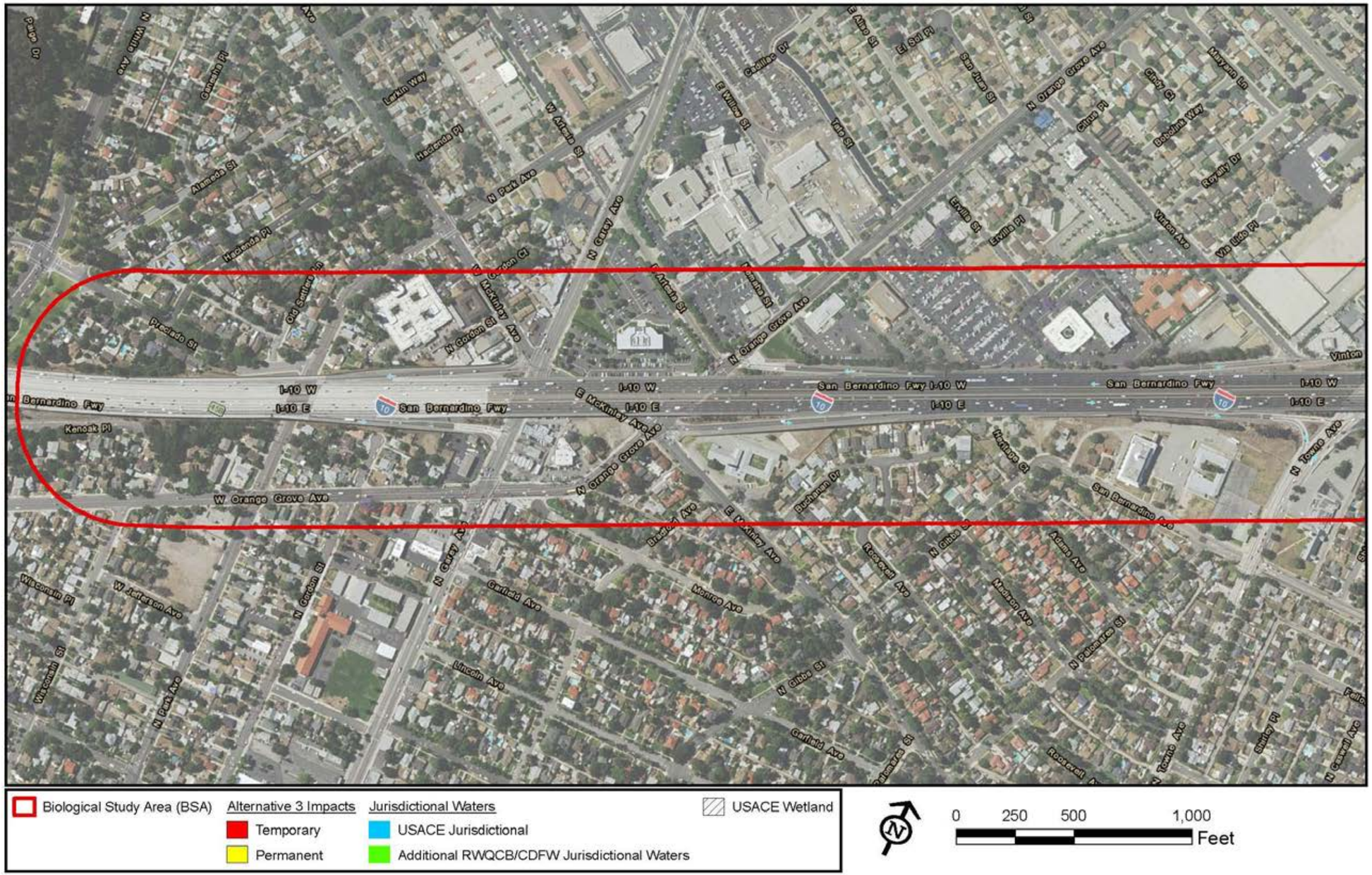
This page intentionally left blank.


Crestview Rd
Hampton Rd
Ivan Ct
Brighton Ct
Crestview Rd
Alton Ct
Camelot Dr
Buckingham Dr
Wimbleton Dr
Crestview Rd
Daisy Ave
52
50
51
Bradbury Dr
Reservoir Rd
I-10 W San Bernardino Fwy
I-10 E
Devonshire Dr
Concord Ln
Lexington Ln
Sheffield Ln
Windsor Ct
Buckingham Dr
Sophia Ct
Reservoir Rd
I-10 W
San Bernardino Fwy
I-10 E
Ford St
Patricia Dr
Brandon Ct
Golden West Dr
I-15 Prod
E Sunset Dr N
Patricia Dr
Golden West Dr
Kimball Ln
Biological Study Area (BSA)
Alternative 2 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
N
0
250
500
1,000
Feet

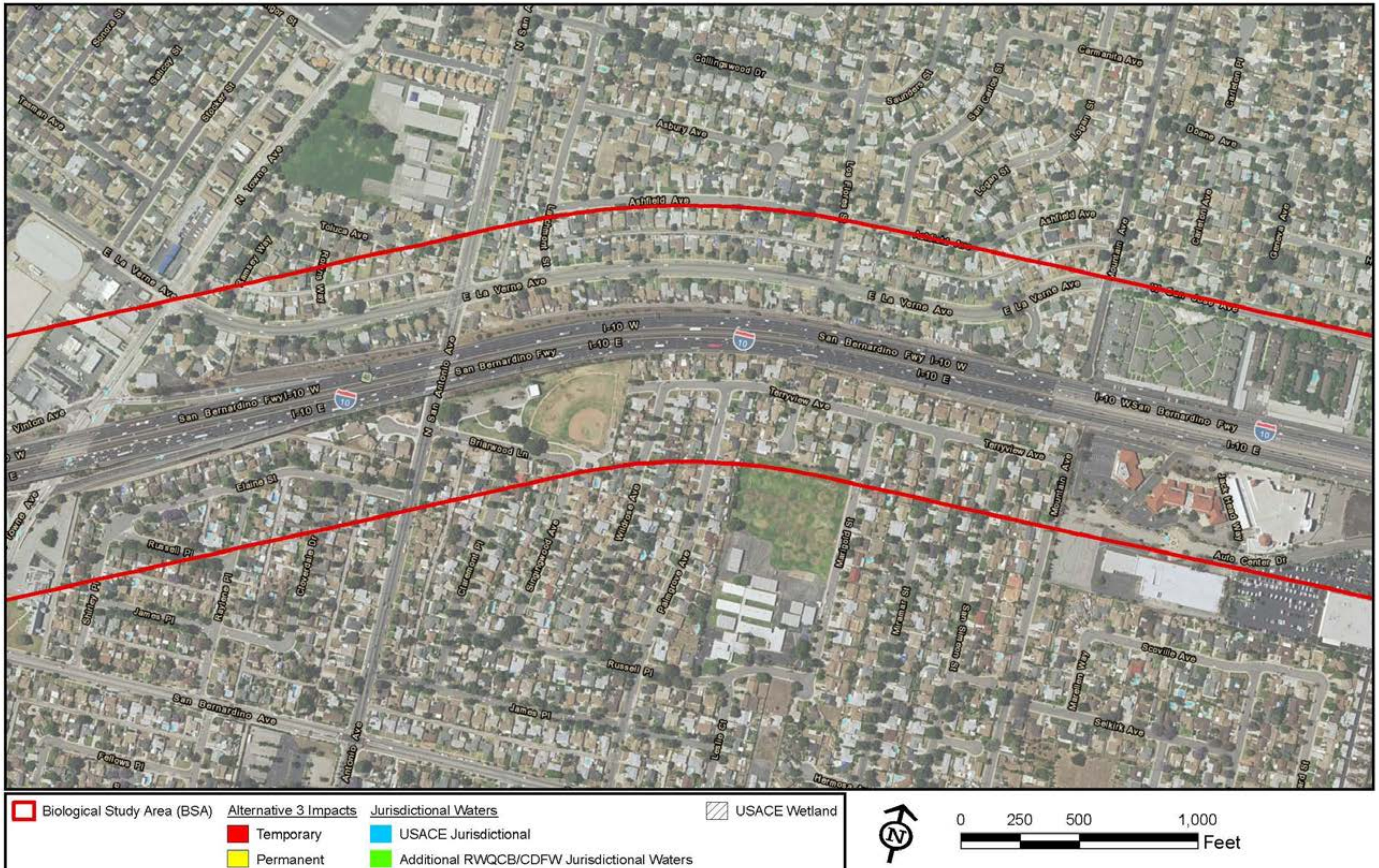
This page intentionally left blank.

Appendix G Jurisdictional Waters Impact Mapping for Alternative 3

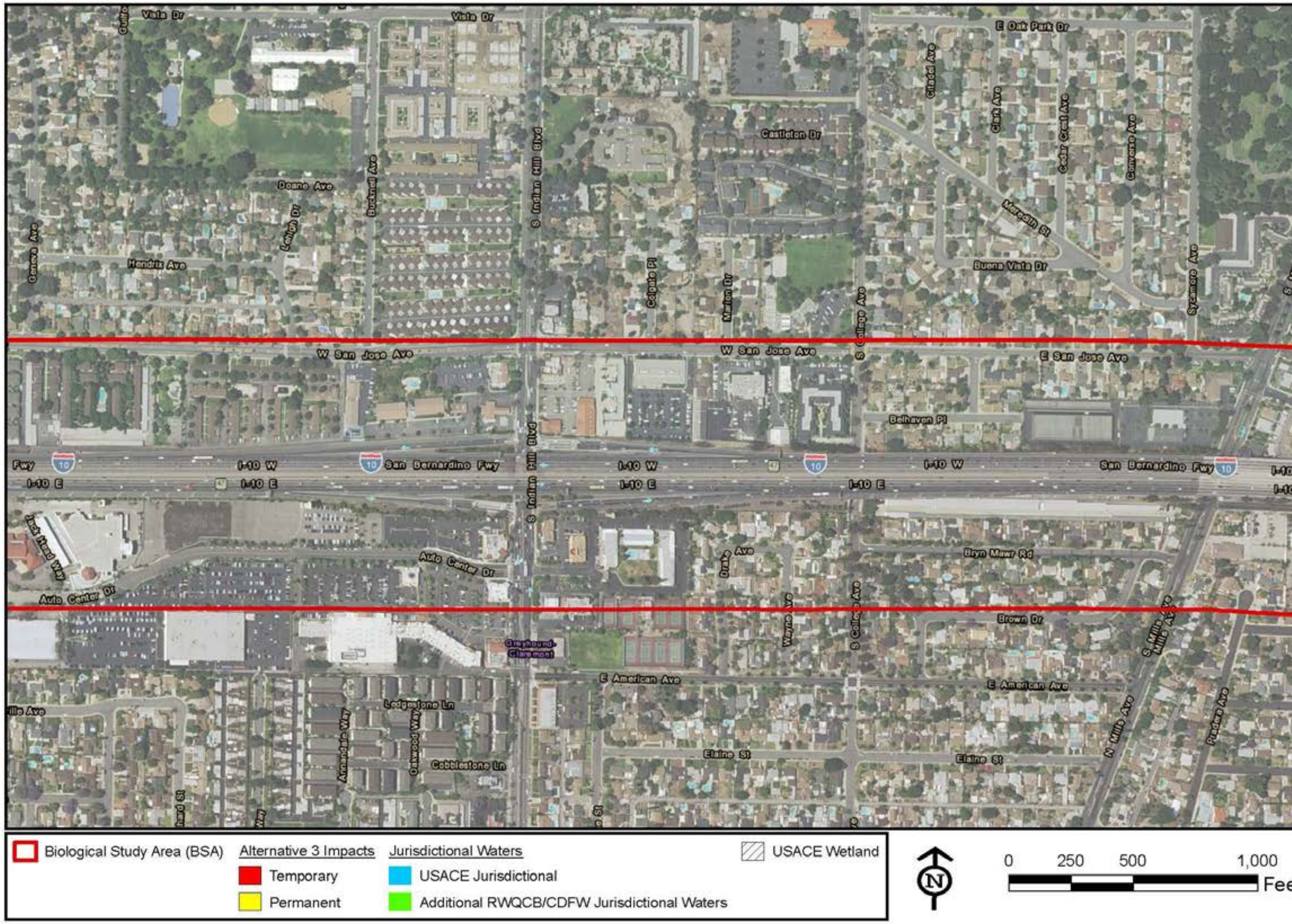
This page intentionally left blank.


Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
0
250
500
1,000
Feet
I-10 W
I-10 E
San Bernardino Fwy
W Orange Grove Ave
N Orange Grove Ave
E McKinley Ave
N Gordon St
N Glassy Ave
N Park Ave
W Artesia St
E Willow St
Larkin Way
Hacienda Pl
Almeda St
Precinto St
Old Settlers Trl
Kansak Pl
Wisconsin Pl
W Jefferson Ave
Garfield Ave
Lincoln Ave
Monroe Ave
N Gibbs St
Vinton

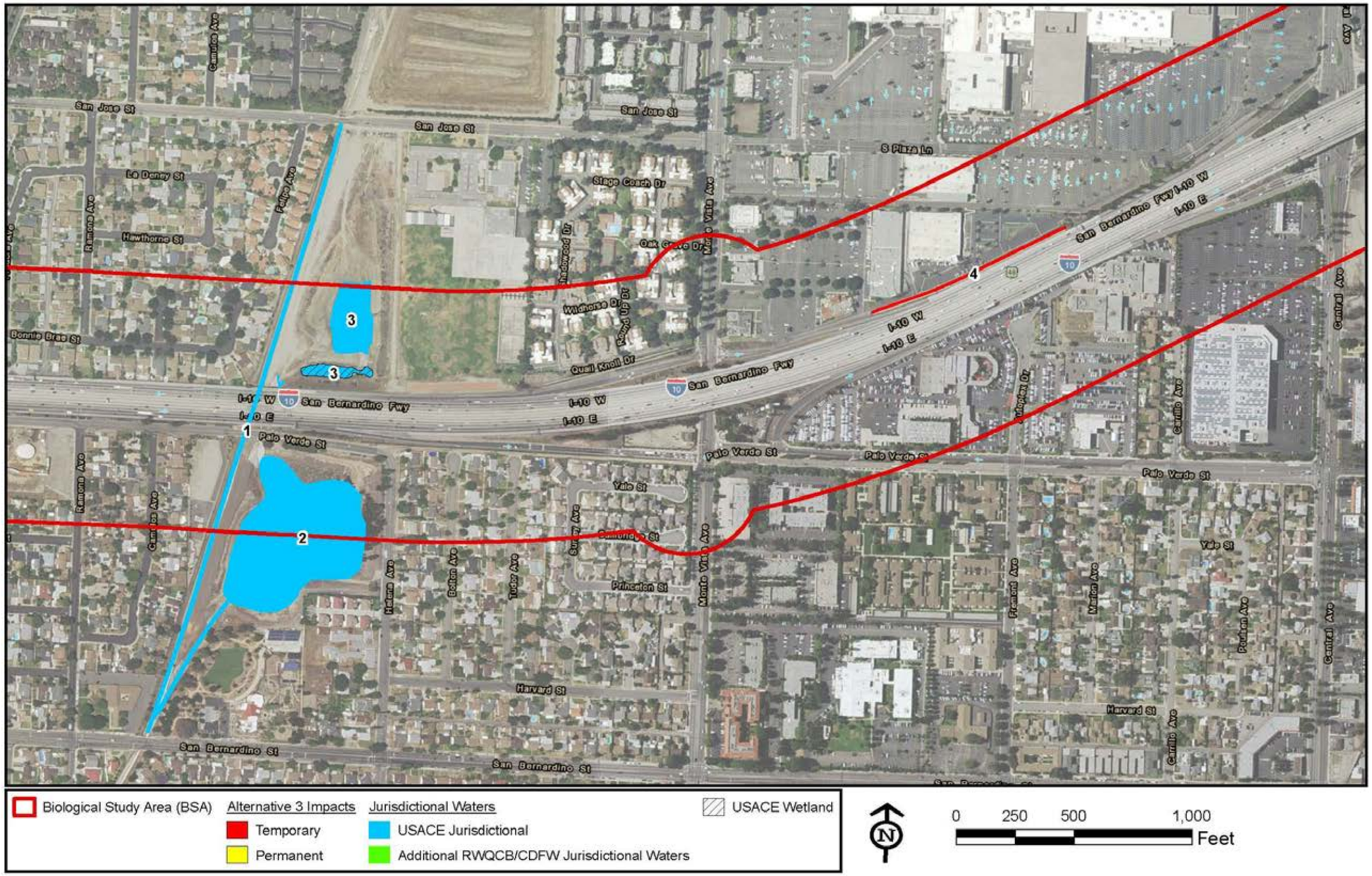
This page intentionally left blank.


Sonora St
Salicoy St
Tasman Ave
Stocker St
N Towne Ave
Toluca Ave
E La Verne Ave
Ramsey Way
Vinton Ave
San Bernardino Fwy I-10 W
I-10 E
N San Antonio Ave
Collingswood Dr
Asbury Ave
Saunders St
San Carlos St
Los Flores St
Logan St
Ashfield Ave
Lechmont St
I-10 W
San Bernardino Fwy
Terryview Ave
Briarwood Ln
Carmanita Ave
Carleton Pl
Doane Ave
Carleton Ave
Geneva Ave
Mountain Ave
I-10 WSan Bernardino Fwy
Jack Head Way
Auto Center Dr
Elaine St
Russell Pl
Shirley Pl
James Pl
Raylene Pl
Cloverdale Dr
Claremont Pl
Singingwood Ave
Wildrose Ave
Palmgrove Ave
Marigold St
Miramar St
San Simeon St
San Bernardino Ave
Fellows Pl
Antonio Ave
Leslie Ct
Scoville Ave
Marellen Way
Selkirk Ave
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

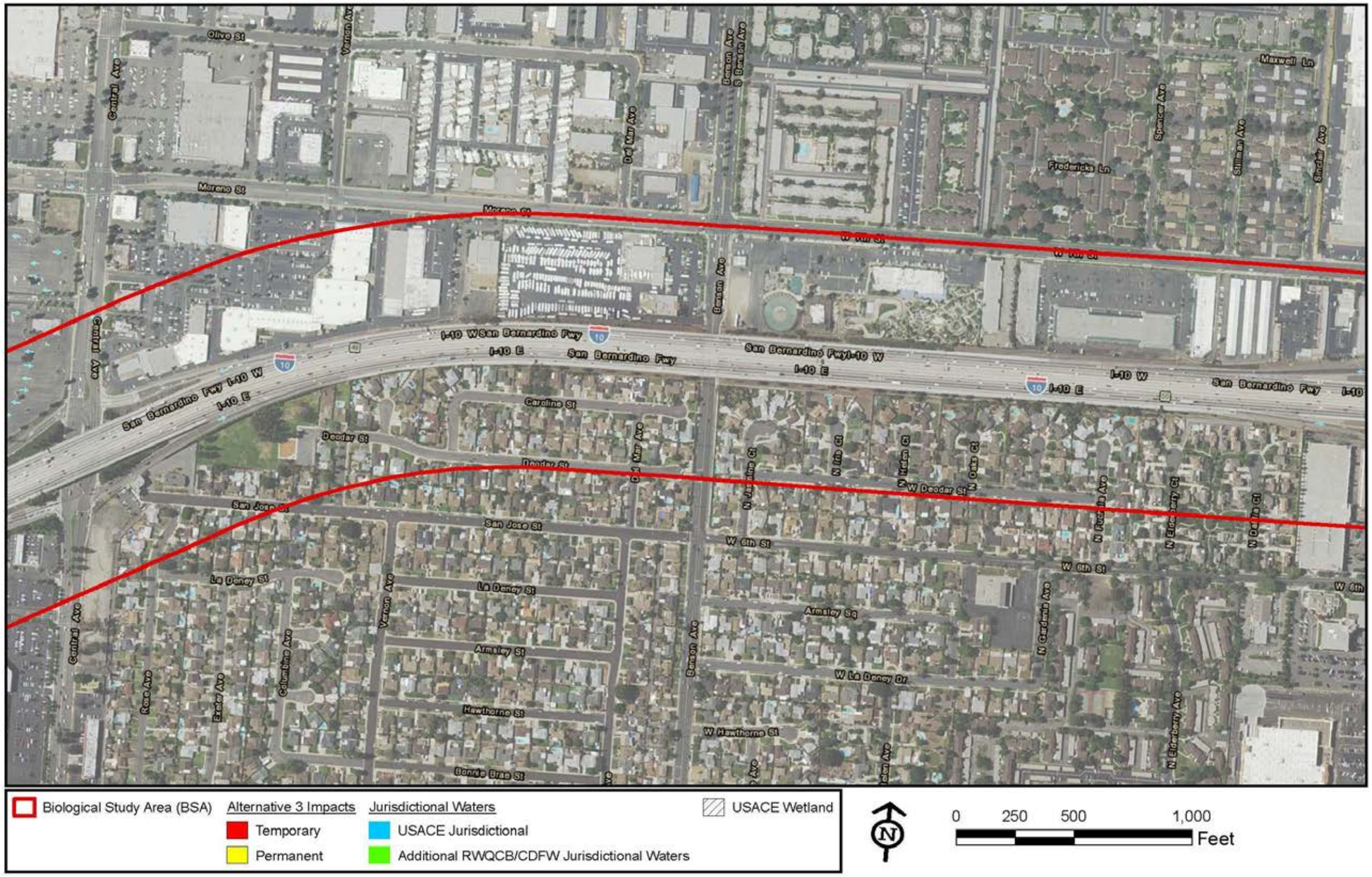
This page intentionally left blank.


Vista Dr
E Oak Park Dr
Doane Ave
Bucknell Ave
S Indian Hill Blvd
Castleton Dr
Claudd Ave
Clark Ave
Cedar Crest Ave
Converse Ave
Meredith St
Buena Vista Dr
Geneva Ave
Hendrix Ave
Lehigh Dr
Colgate Pl
Marion Dr
S College Ave
Sycamore Ave
S Mills Ave
Mills Ave
Pradera Ave
W San Jose Ave
E San Jose Ave
Belhaven Pl
Bonnie Brae
Fwy
I-10 W
I-10 E
San Bernardino Fwy
Palo Verde St
Jack Head Way
Auto Center Dr
Drake Ave
Bryn Mawr Rd
Wayne Ave
Brown Dr
Cambridge St
Greyhound-Claremont
E American Ave
Ledgestone Ln
Annandale Way
Oakwood Way
Cobblestone Ln
Elaine St
N Mills Ave
Princeton St
Harvard St
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

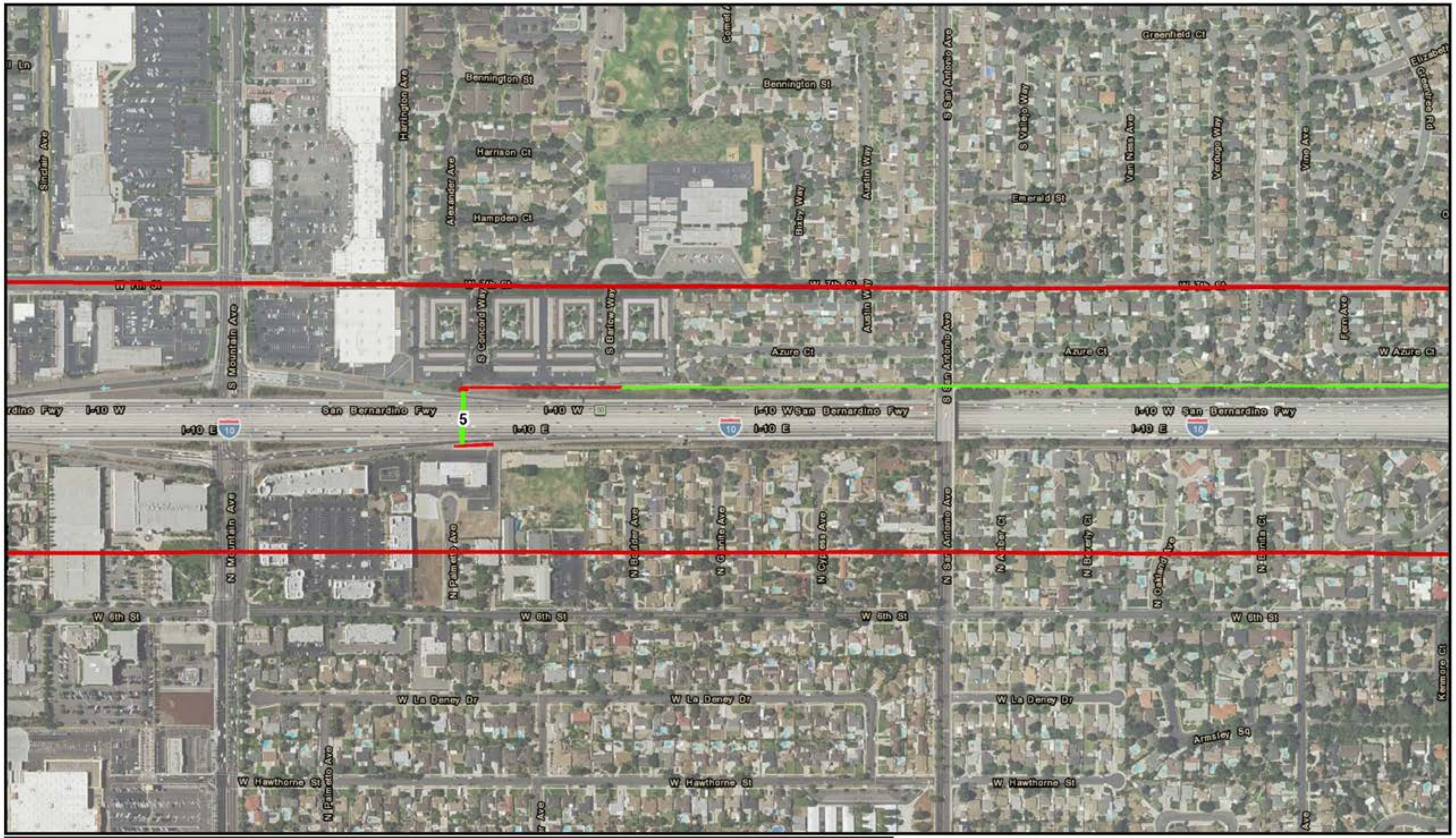
This page intentionally left blank.


San Jose St
La Denny St
Hawthorne St
Bonnie Brae St
Ramona Ave
Camulos Ave
Felipe Ave
Stage Coach Dr
Oak Grove Dr
Wildhorse Dr
Quail Knoll Dr
Meadowood Dr
Monte Vista Ave
S Plaza Ln
I-10 W
I-10 E
San Bernardino Fwy
Palo Verde St
Yale St
Princeton St
Harvard St
San Bernardino St
Hellam Ave
Bolton Ave
Tudor Ave
Sunset Ave
Fremont Ave
Marion Ave
Pontiac Ave
Central Ave
Carrillo Ave
1
2
3
4
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

This page intentionally left blank.


Olive St
Central Ave
Vernon Ave
Del Mar Ave
Benson Ave
S Benson Ave
Maxwell Ln
Spencer Ave
Stillman Ave
Sinclair Ave
Fredericks Ln
Moreno St
W 7th St
I-10 W San Bernardino Fwy
I-10 E
San Bernardino Fwy
San Bernardino Fwy I-10 W
I-10 E
I-10 W
San Bernardino Fwy
I-10
Caroline St
Dexter St
N Del Mar Ave
N Jasmine Ct
N Ivy Ct
N Indian Ct
N Oaks Ct
W Dexter St
N Fuchsia Ave
N Elderberry Ct
N Oak Ln Ct
San Jose St
W 6th St
W 8th
La Deney St
Vernon Ave
Armsley Sq
N Gardenia Ave
Armsley St
W La Deney Dr
Columbine Ave
Rose Ave
Exeter Ave
Hawthorne St
W Hawthorne St
N Elderberry Ave
Bonnie Brae St
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

This page intentionally left blank.


Sinclair Ave
S Mountain Ave
N Mountain Ave
Harrington Ave
Bennington St
Harrison Ct
Alexander Ave
Hampden Ct
Bixby Way
Austin Way
S San Antonio Ave
N San Antonio Ave
S Vallejo Way
Emerald St
Van Ness Ave
Verdugo Way
Vine Ave
Greenfield Ct
Greentree Rd
S Concord Way
S Barlow Way
Azure Ct
W Azure Ct
Fern Ave
San Bernardino Fwy
I-10 W
I-10 E
I-10 W San Bernardino Fwy
5
10
N Palmetto Ave
N Boulder Ave
N Granite Ave
N Cypress Ave
N Amber Ct
N Beverly Ct
N Oakland Ave
N Bonita Ct
W 6th St
W La Deney Dr
Armsley Sq
Kenmore Ct
W Hawthorne St

Biological Study Area (BSA)

Alternative 3 Impacts
- Temporary
- Permanent

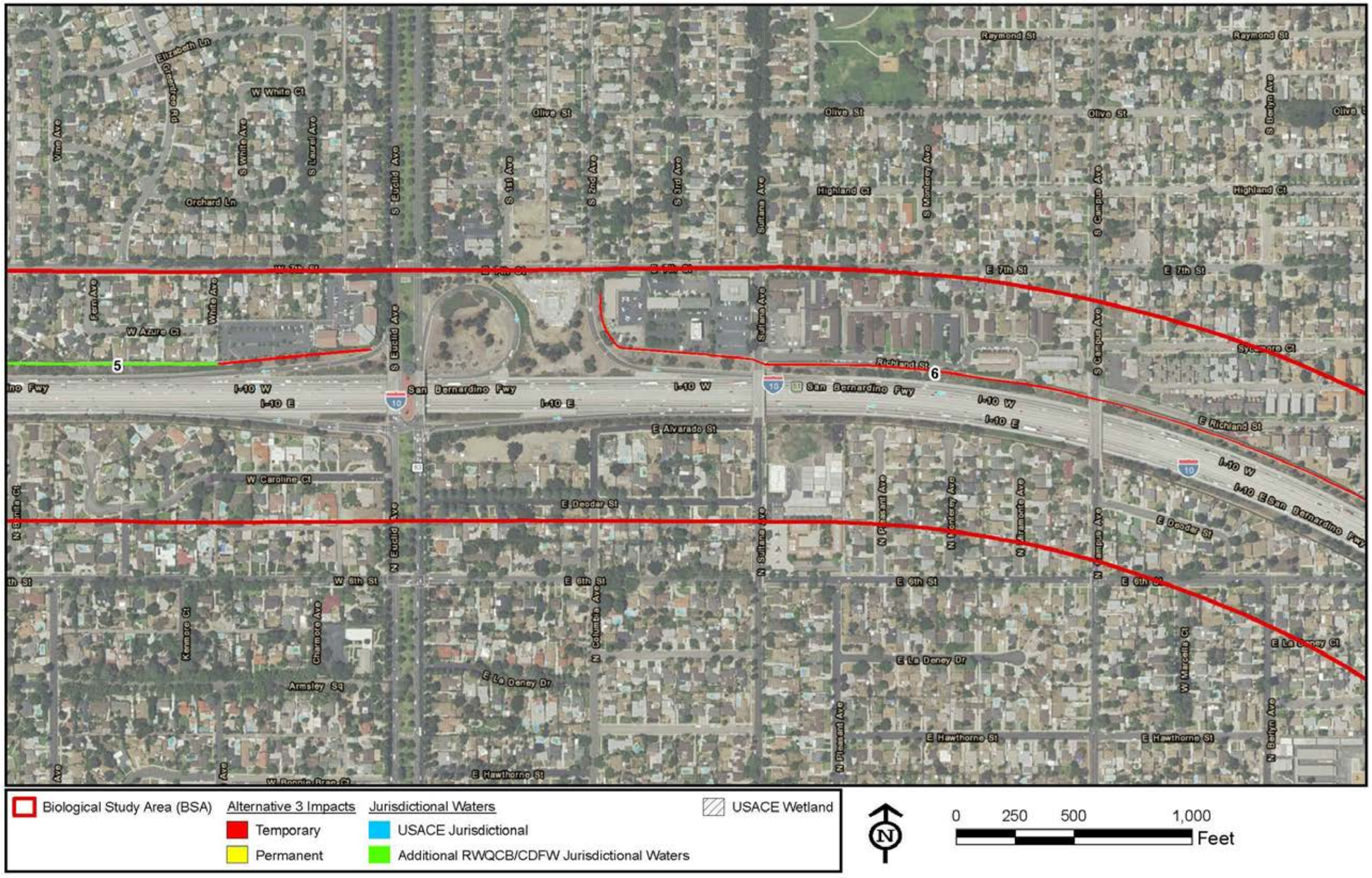
Jurisdictional Waters
- USACE Jurisdictional
- Additional RWQCB/CDFW Jurisdictional Waters

USACE Wetland

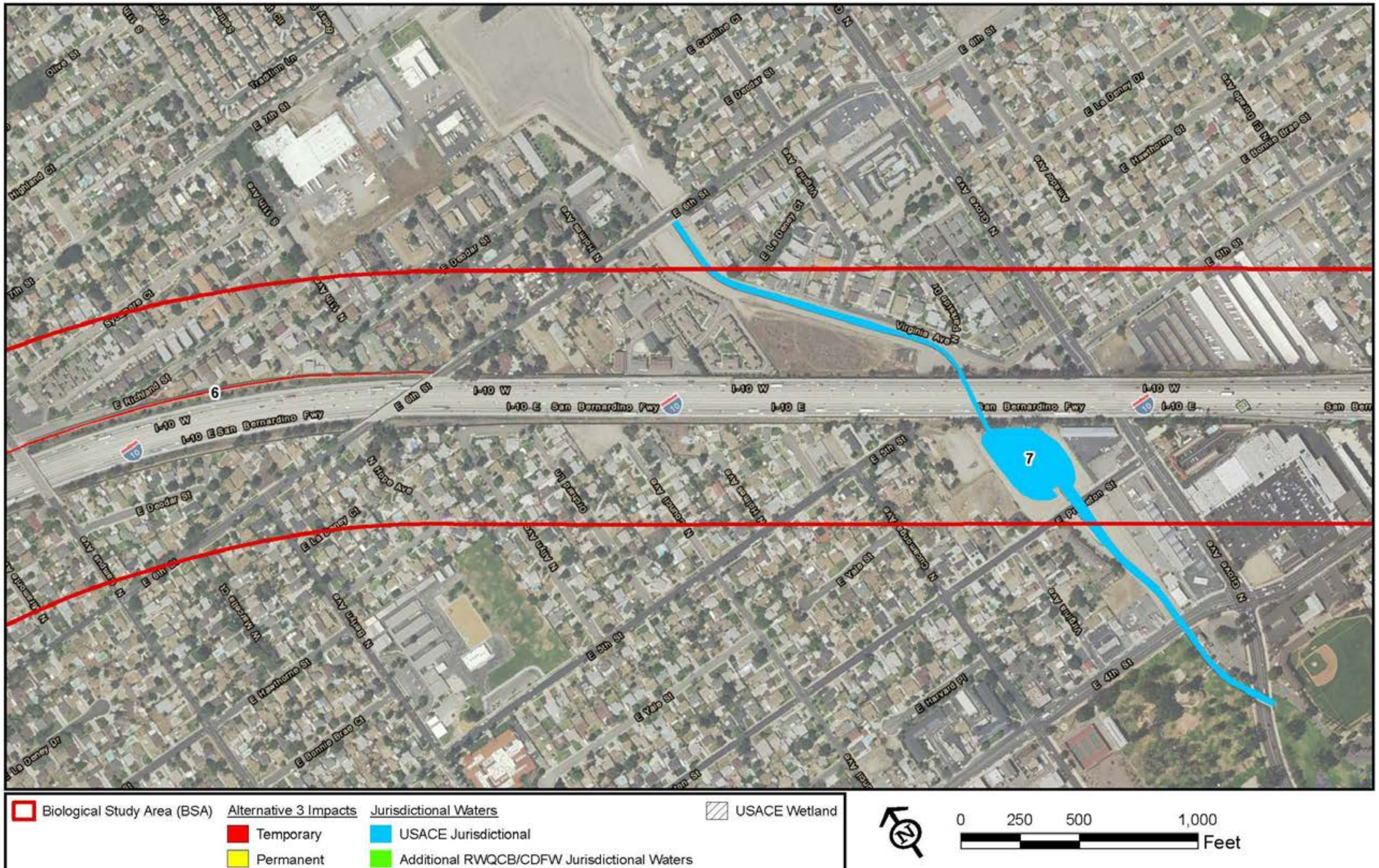
N

0 250 500 1,000 Feet

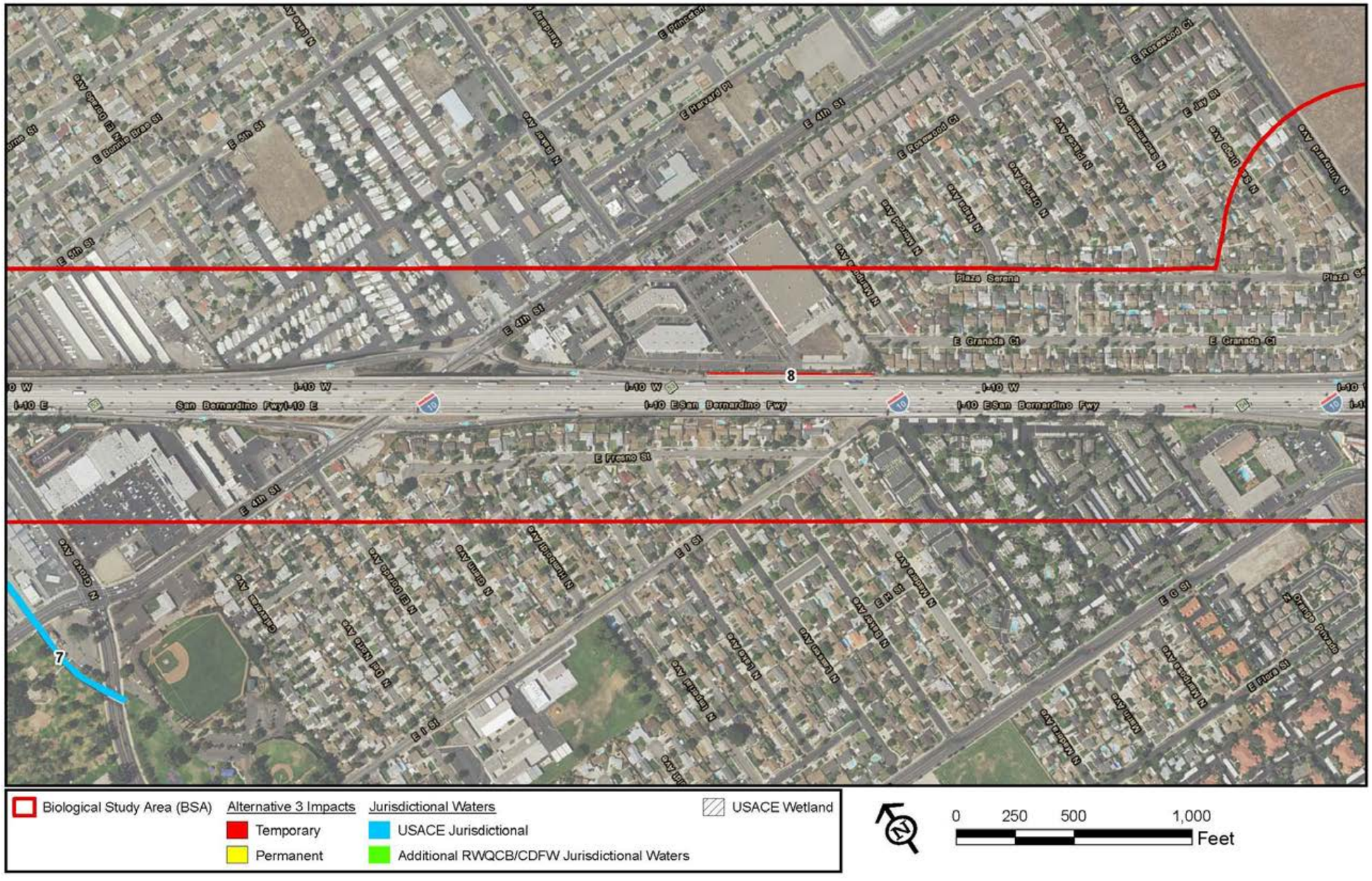
This page intentionally left blank.


Elizabeth Ln
Greenspot Rd
W White Ct
Vine Ave
S White Ave
S Laurel Ave
Olive St
S Eucalid Ave
S 1st Ave
S 2nd Ave
S 3rd Ave
Sultana Ave
Raymond St
S Monterey Ave
S Campus Ave
S Berlyn Ave
Highland Ct
Orchard Ln
W 7th St
E 7th St
Fern Ave
White Ave
W Azure Ct
5
6
I-10 W
I-10 E
San Bernardino Fwy
Richland St
E Richland St
E Alvarado St
W Caroline Ct
N Bonita Ct
E Deodar St
N Pleasant Ave
N Monterey Ave
N Alameda Ave
W 6th St
E 6th St
Kenmore Ct
Chamore Ave
Armsley Sq
Columbia Ave
E La Deney Dr
W Marcella Ct
E Hawthorne St
N Berlyn Ave
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

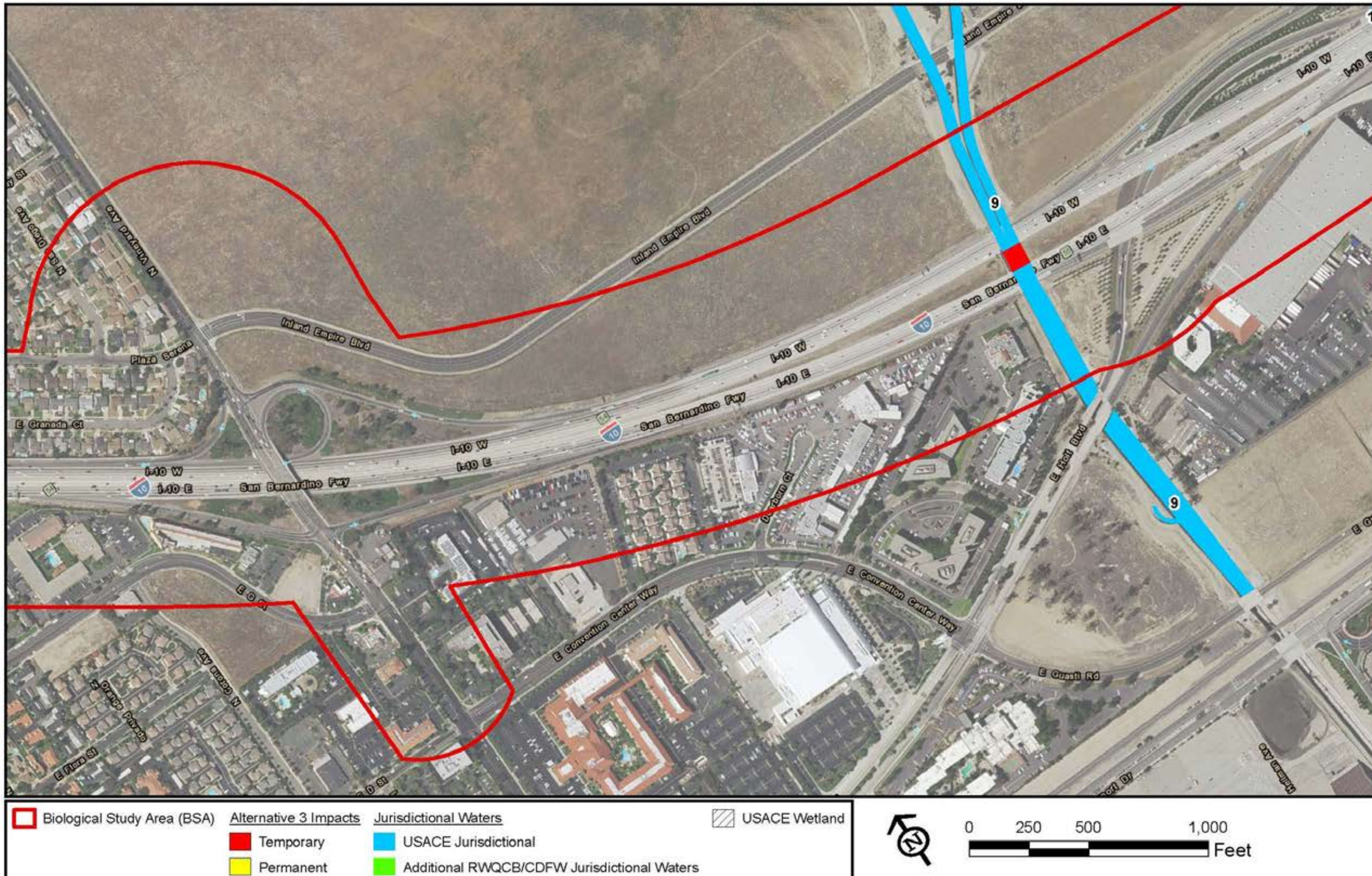
This page intentionally left blank.


Olive St
Tradition Ln
E 7th St
Highland Ct
S 11th Ave
7th St
N 11th Ave
E Deodar St
E Caroline Ct
E 6th St
N Holmes Ave
Virginia Ave
E La Deney Ct
N Grove Ave
E La Deney Dr
Amador Ave
E Hawthorne St
N El Dorado Ave
E Bonnie Brae St
Virginia Ave
E Richland St
6
7
I-10 W
I-10 E San Bernardino Fwy
I-10 E
San Bernardino Fwy
E 6th St
N Hope Ave
E 5th St
E Yale St
N Cucamonga Ave
E Harvard Pl
E 4th St
N Baker Ave
E Hawthorne St
E Bonnie Brae Ct
E La Deney Dr
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

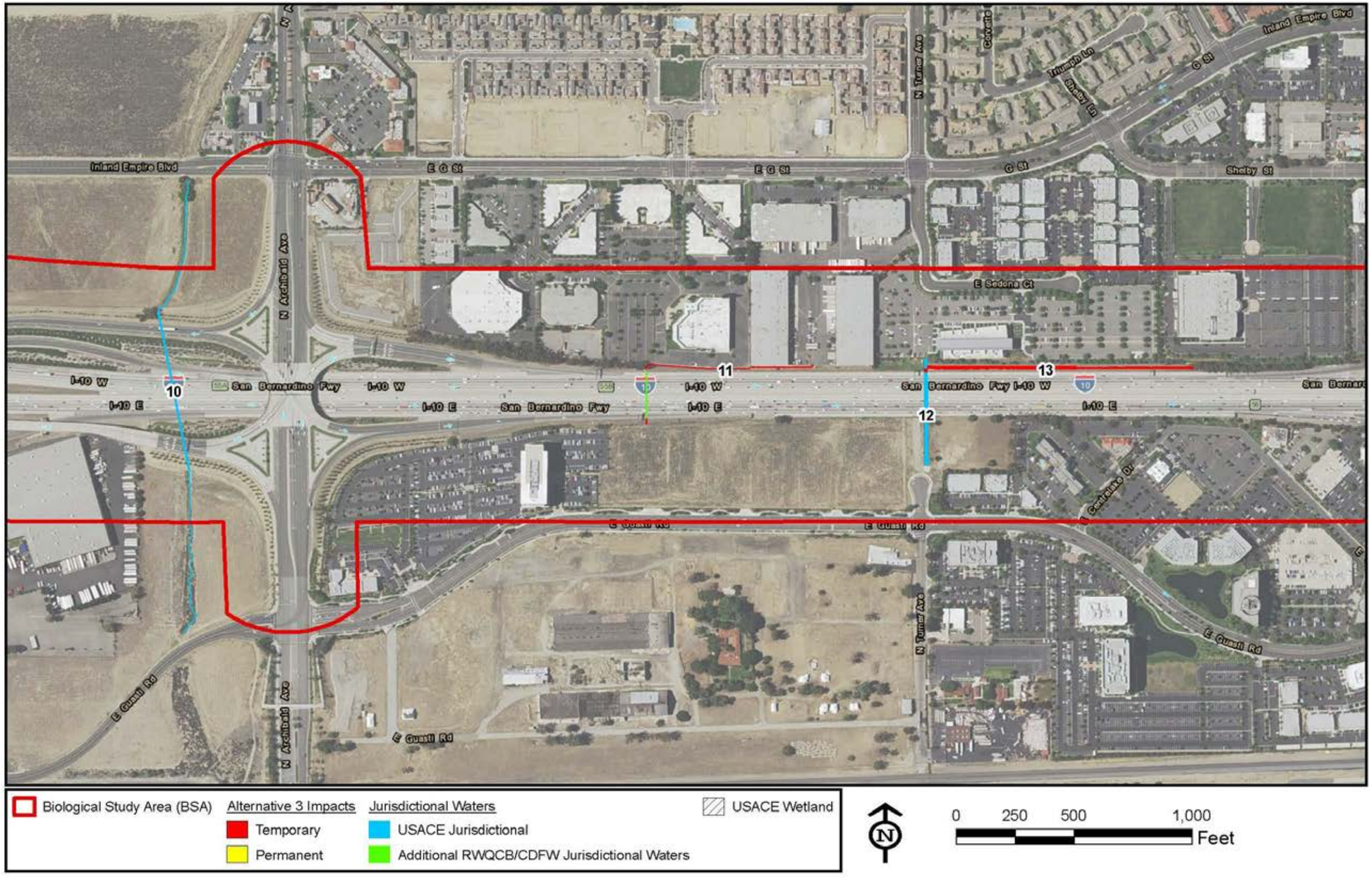
This page intentionally left blank.


E 4th St
E Harvard Pl
E Rosewood Ct
E Granada Ct
Plaza Serena
E Fresno St
I-10 W
I-10 E
San Bernardino Fwy
8
7
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
0
250
500
1,000
Feet

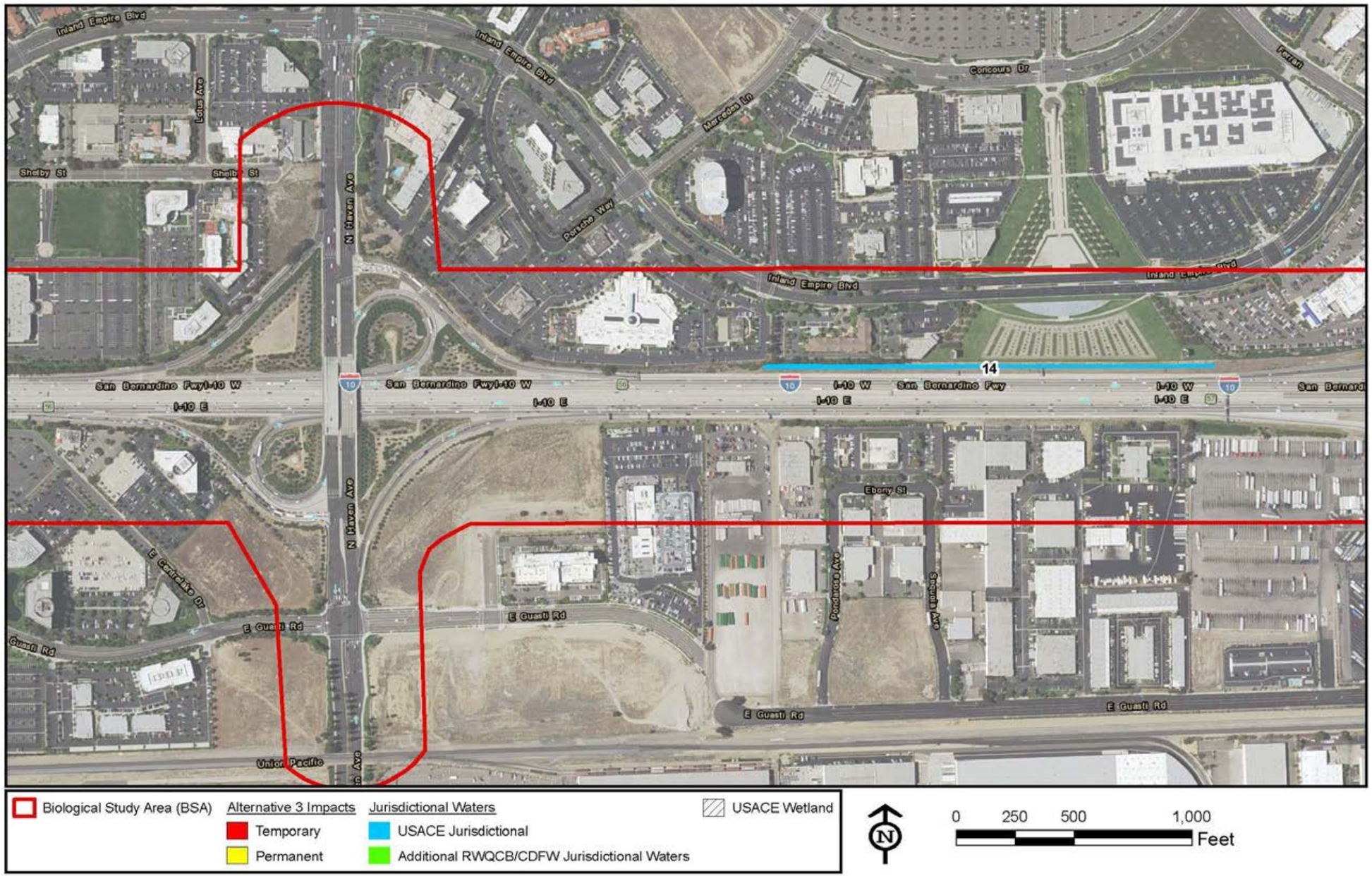
This page intentionally left blank.


10
9
9
I-10 W
I-10 E
San Bernardino Fwy
Inland Empire Blvd
N Vineyard Ave
Plaza Serena
E Granada Ct
Diego Ave
E G St
N Corona Ave
N Orange Privado
E Flora St
D St
E Convention Center Way
Dearborn Ct
E Holt Blvd
E Guasti Rd
Haven Ave
Airport Dr
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

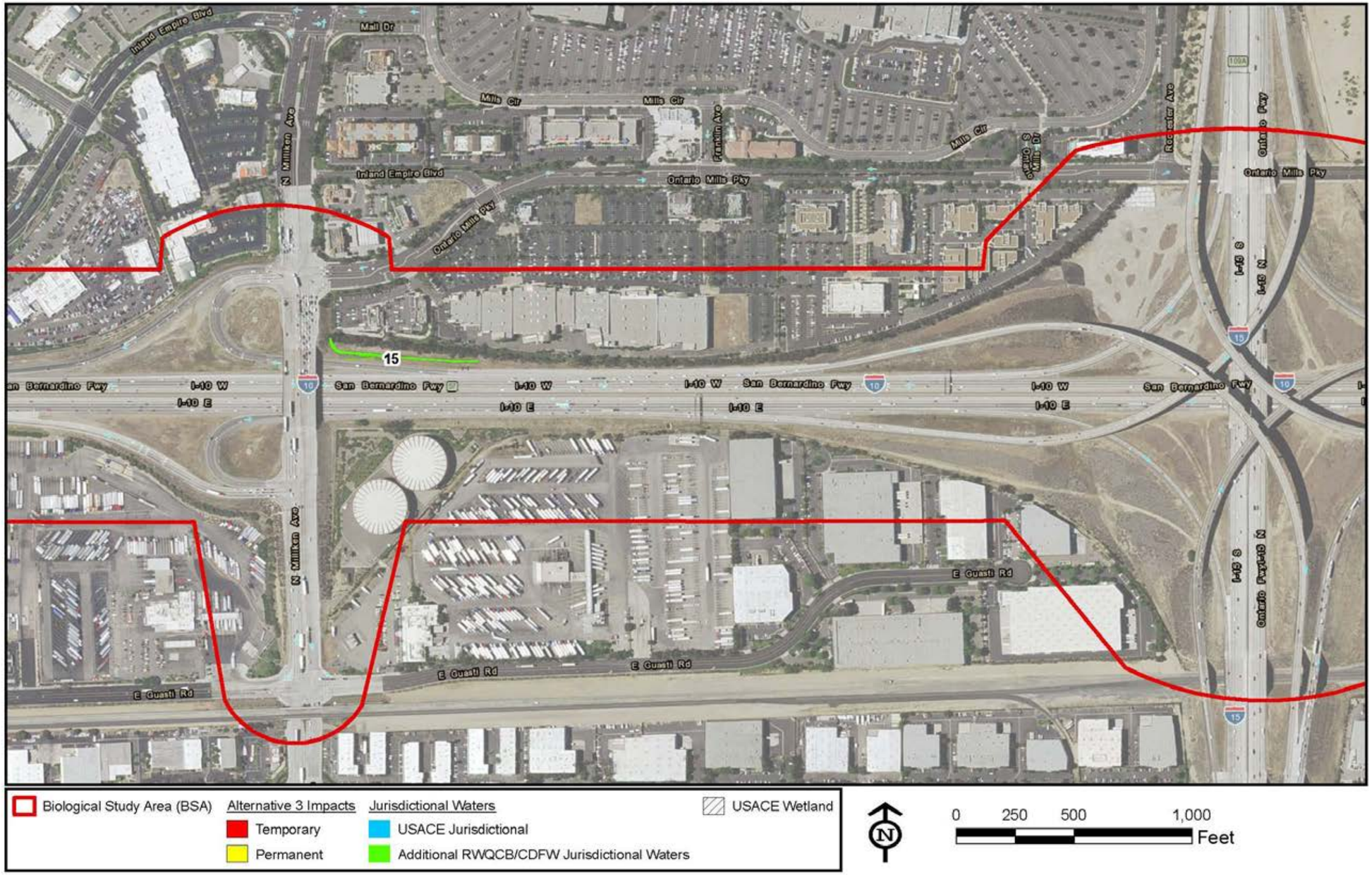
This page intentionally left blank.


Inland Empire Blvd
E G St
N Archibald Ave
N Turner Ave
Corvette
Triumph Ln
Shelby Ln
G St
Shelby St
E Sedona Ct
I-10 W
I-10 E
San Bernardino Fwy
10
11
12
13
E Guasti Rd
N Griffino Dr
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

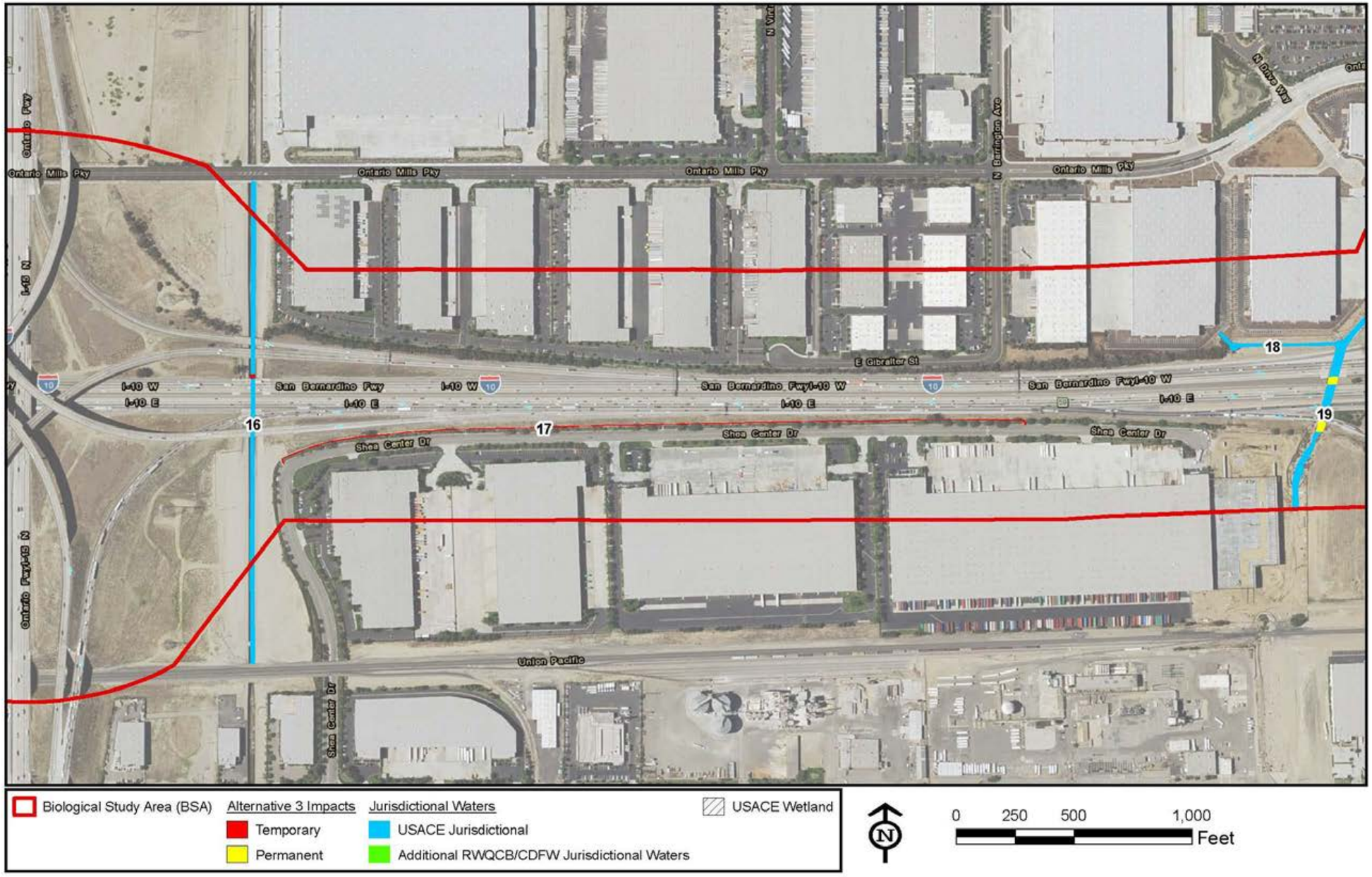
This page intentionally left blank.


Inland Empire Blvd
Lotus Ave
Shelby St
N Haven Ave
Porsche Way
Mercedes Ln
Concours Dr
Ferrari
14
San Bernardino Fwy I-10 W
I-10 E
Ebony St
Pendleton Ave
Spruce Ave
E Guasti Rd
Guasti Rd
E Centralia Dr
Union Pacific
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0 250 500 1,000
Feet

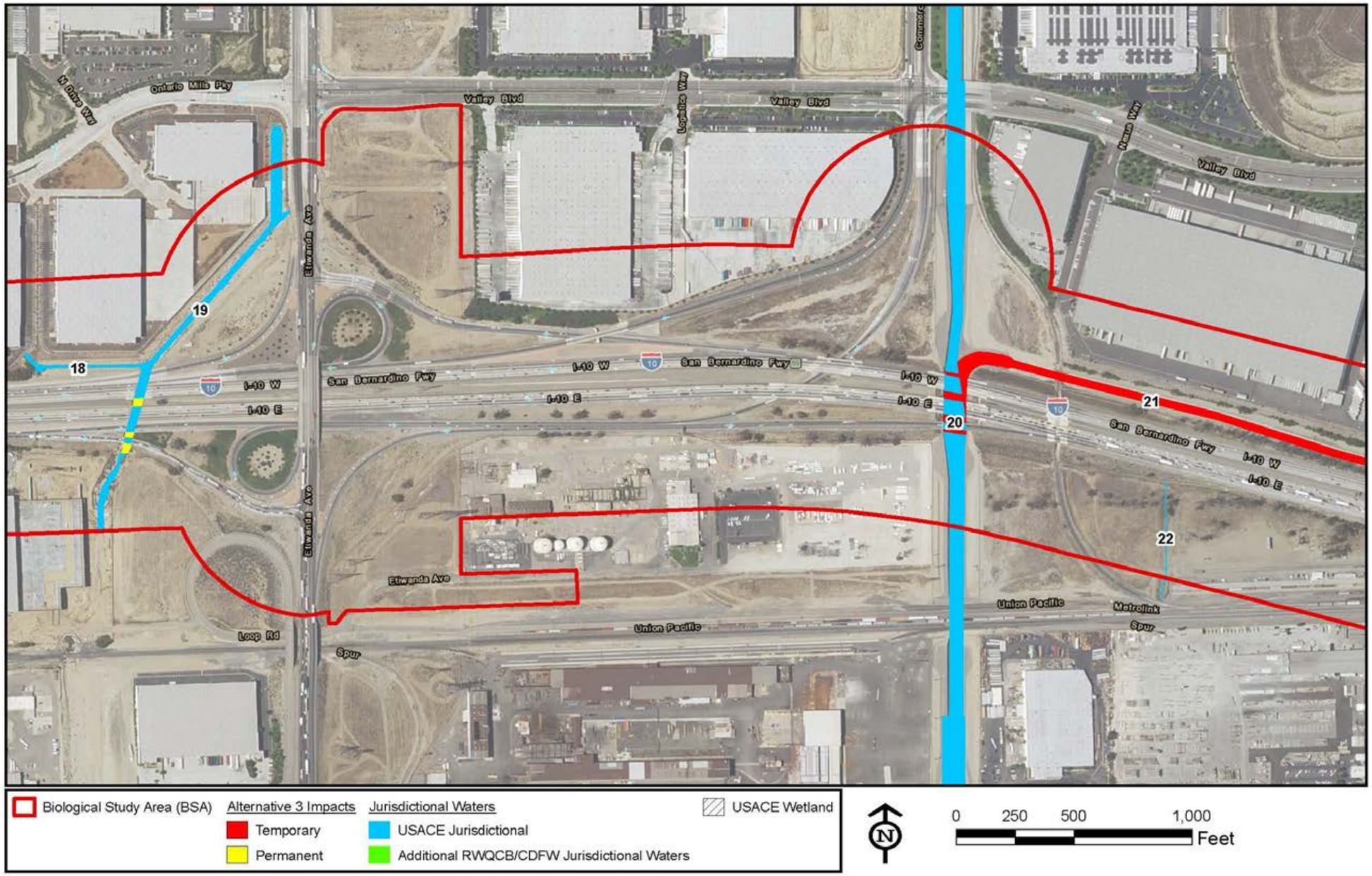
This page intentionally left blank.


Inland Empire Blvd
Mall Dr
Mills Cir
N Milliken Ave
Franklin Ave
S Ontario Mills Dr
Ontario Mills Pky
Rancho Ave
I-15 S
I-15 N
15
San Bernardino Fwy
I-10 W
I-10 E
E Guasti Rd
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

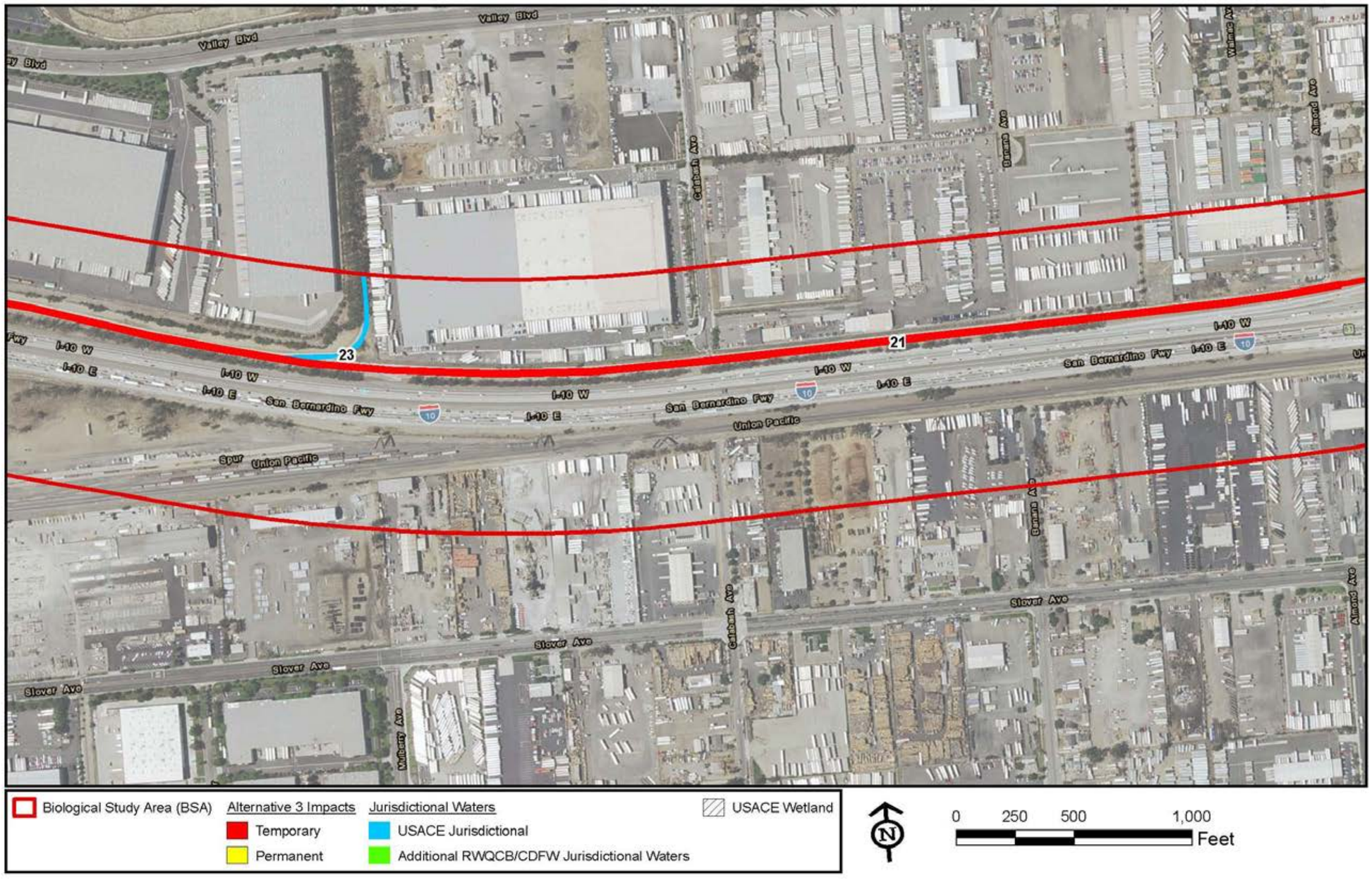
This page intentionally left blank.


Ontario Mills Pky
Ontario Mills Pky
Ontario Mills Pky
Ontario Mills Pky
N Vineyard Ave
N Barrington Ave
N Dove Way
Ontario Fwy
I-15 N
Ontario Fwy I-15 N
I-10 W
I-10 E
San Bernardino Fwy
I-10 W
I-10 E
San Bernardino Fwy I-10 W
I-10 E
San Bernardino Fwy I-10 W
I-10 E
E Gibraltar St
16
17
18
19
Shea Center Dr
Shea Center Dr
Shea Center Dr
Shea Center Dr
Union Pacific
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

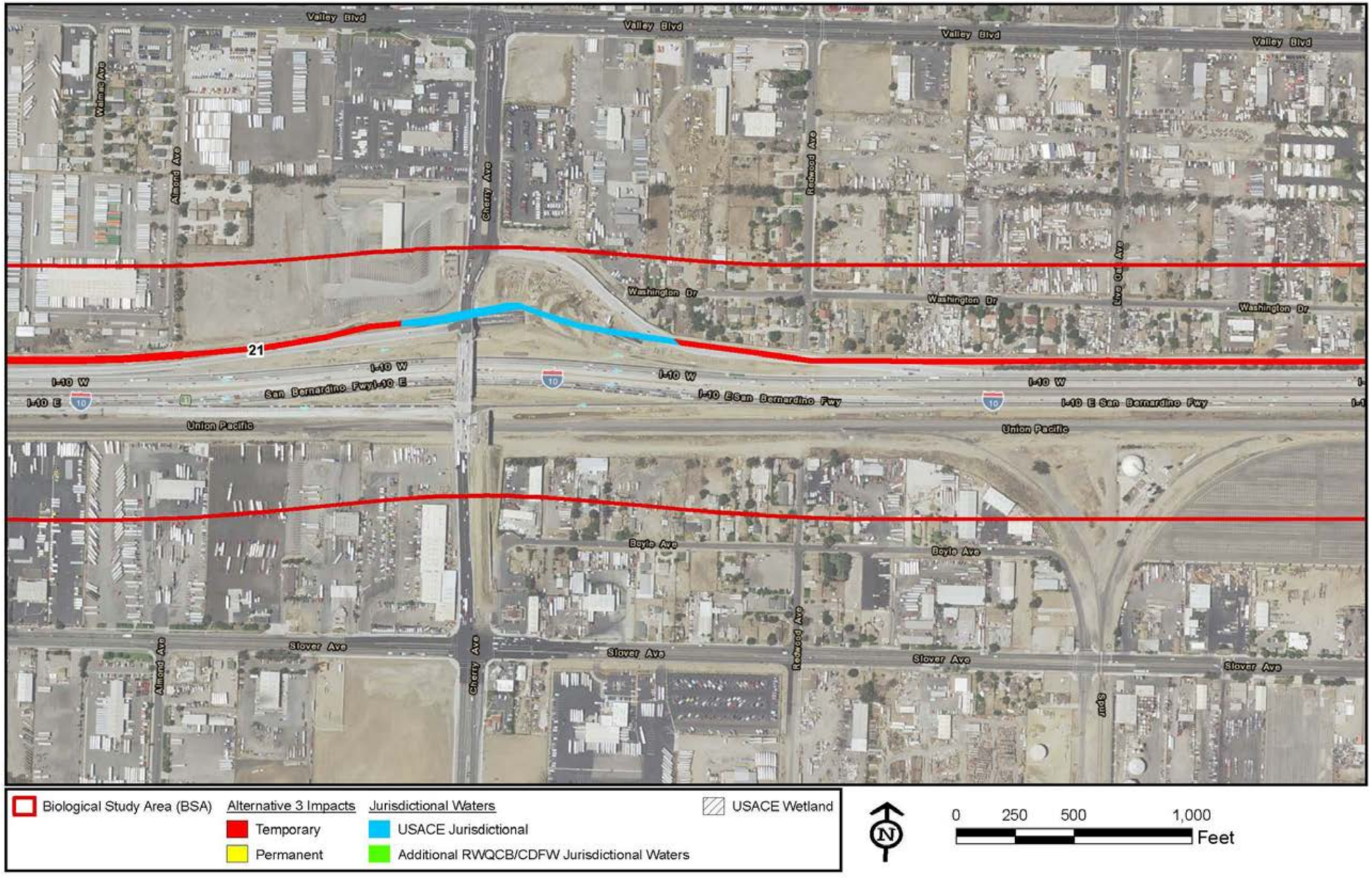
This page intentionally left blank.


N Davis Way
Ontario Mills Pky
Valley Blvd
Logistics Way
Commerce
Nuevo Way
Valley Blvd
Etiwanda Ave
19
18
I-10 W
I-10 E
San Bernardino Fwy
I-10 W
I-10 E
San Bernardino Fwy
20
21
San Bernardino Fwy
I-10 W
I-10 E
22
Etiwanda Ave
Etiwanda Ave
Loop Rd
Union Pacific
Spur
Union Pacific
Metrolink
Spur
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

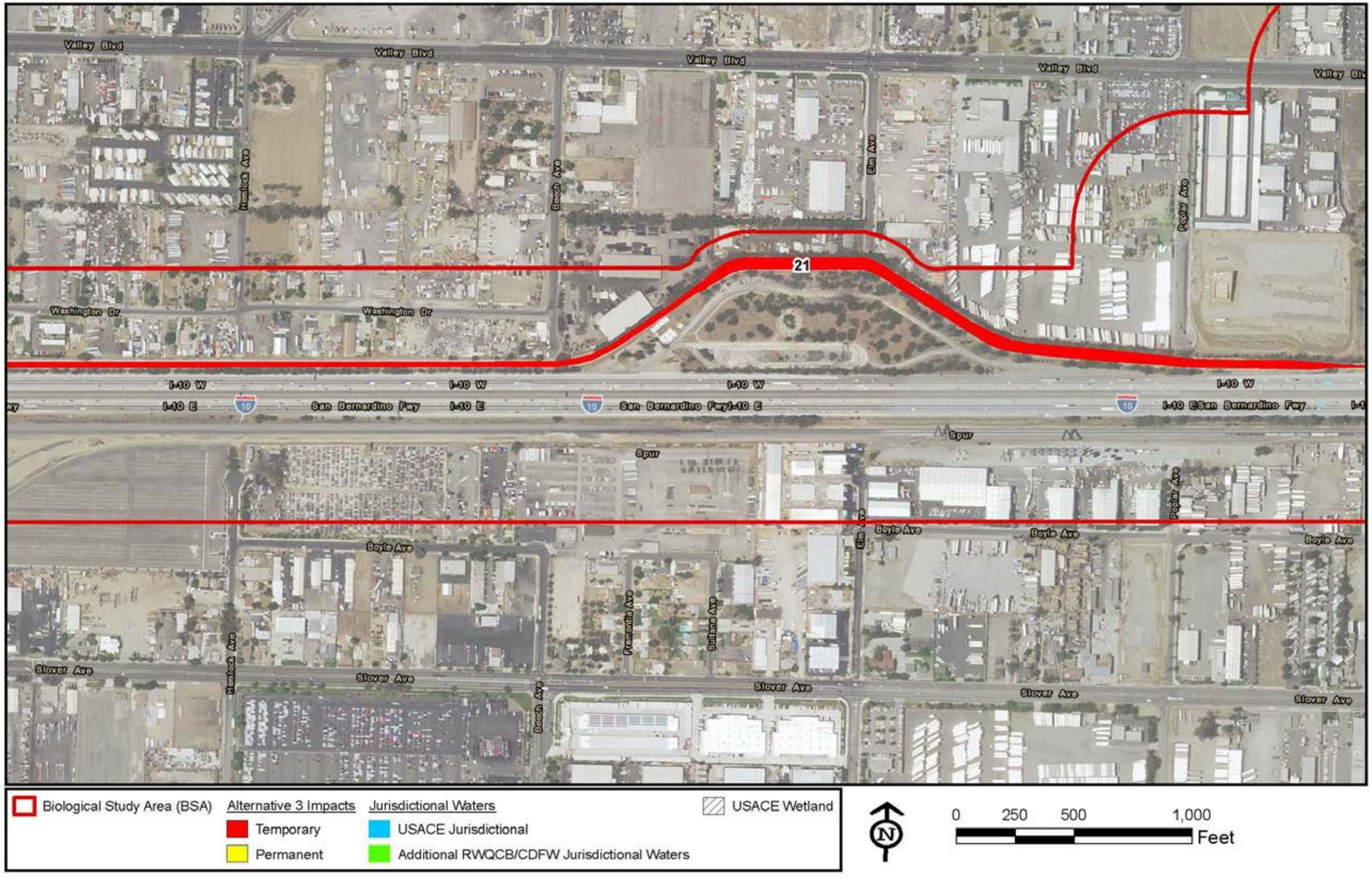
This page intentionally left blank.


Valley Blvd
Valley Blvd
Cahuenga Ave
Banana Ave
Walnut Ave
Almond Ave
23
21
I-10 W
I-10 E
San Bernardino Fwy
Union Pacific
Spur Union Pacific
Slover Ave
Slover Ave
Slover Ave
Cahuenga Ave
Mulberry Ave
Banana Ave
Almond Ave
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

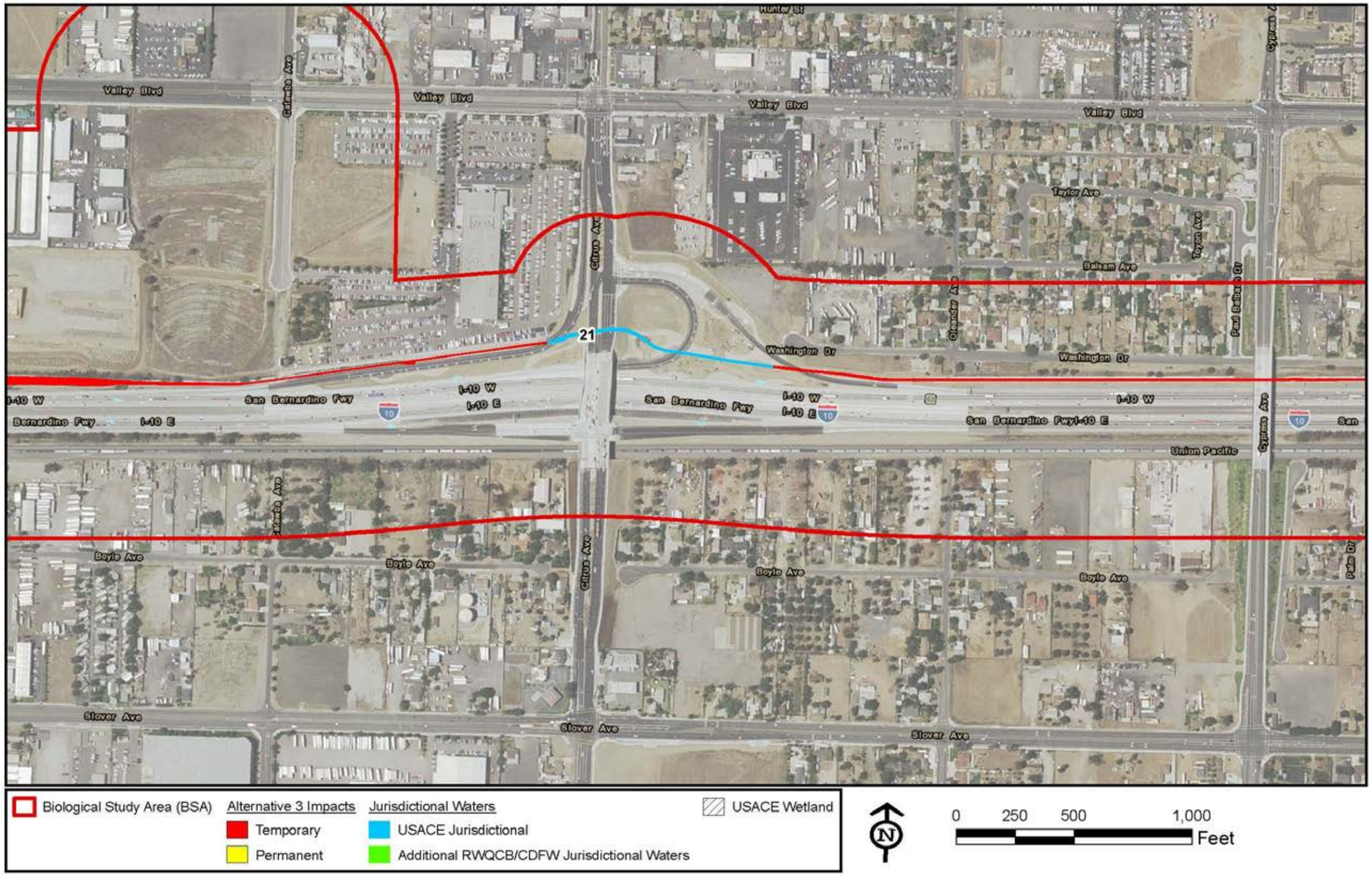
This page intentionally left blank.


Valley Blvd
Valley Blvd
Valley Blvd
Valley Blvd
Welmas Ave
Almond Ave
Cherry Ave
Redwood Ave
Live Oak Ave
Washington Dr
Washington Dr
Washington Dr
21
I-10 W
I-10 E
San Bernardino Fwy I-10 E
I-10 W
I-10 E San Bernardino Fwy
I-10 W
I-10 E San Bernardino Fwy
Union Pacific
Union Pacific
Boyle Ave
Boyle Ave
Slover Ave
Slover Ave
Slover Ave
Slover Ave
Almond Ave
Cherry Ave
Redwood Ave
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

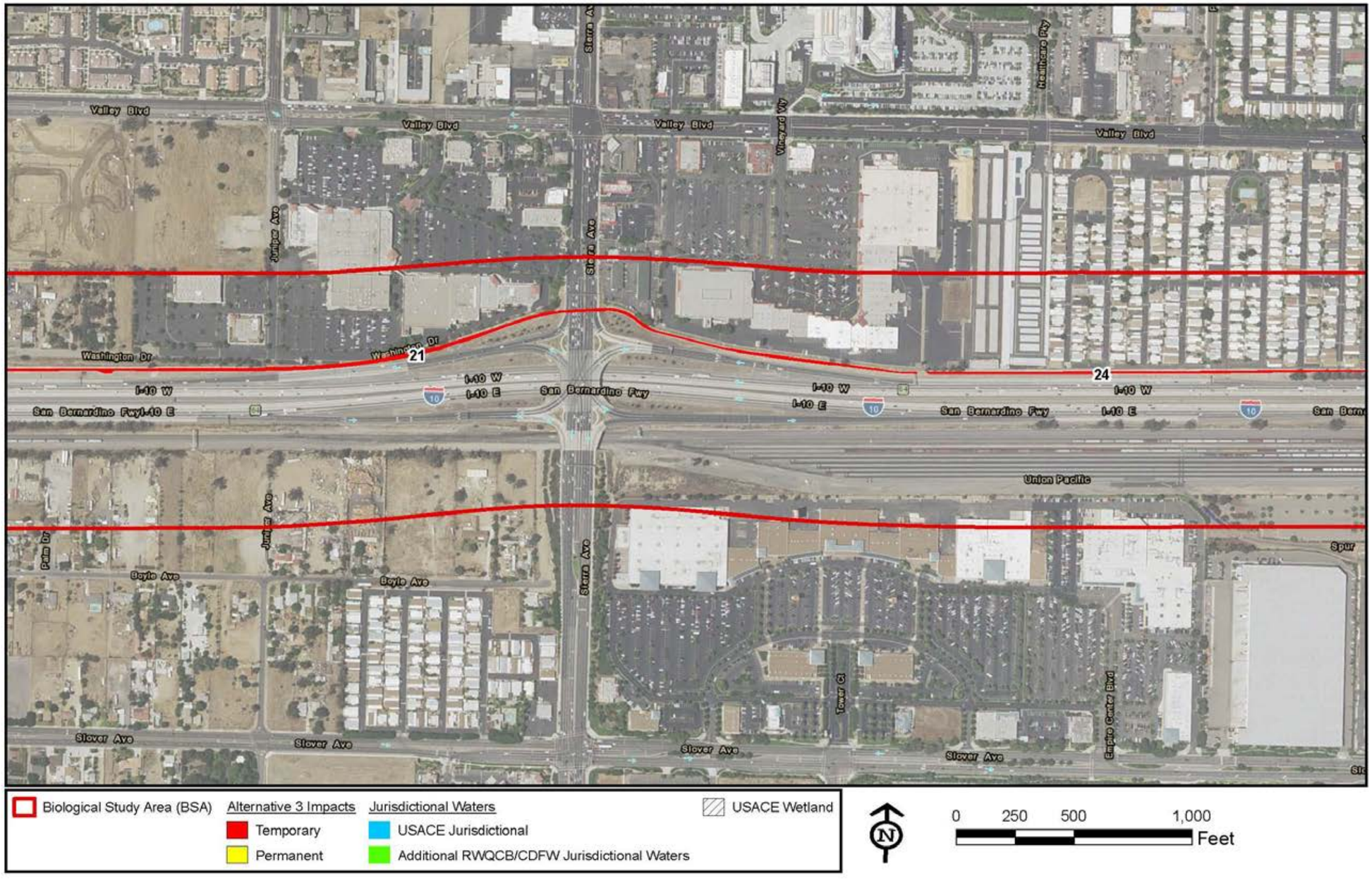
This page intentionally left blank.


Valley Blvd
Hemlock Ave
Beech Ave
Elm Ave
Poplar Ave
21
Washington Dr
I-10 W
I-10 E
San Bernardino Fwy
Spur
Boyle Ave
Fremontia Ave
Sultana Ave
Slover Ave
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

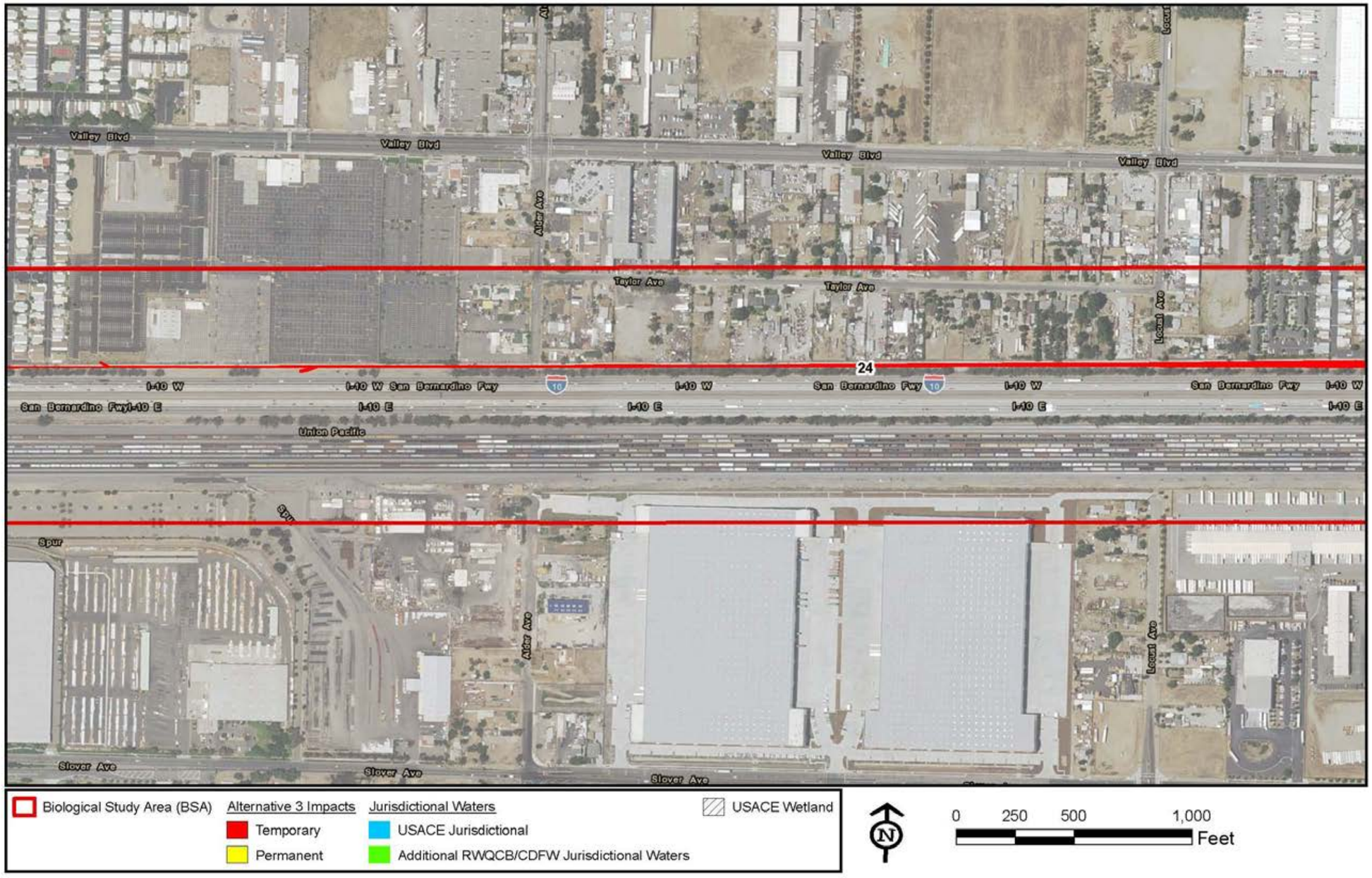
This page intentionally left blank.


Hunter St
Valley Blvd
Cedarpines Ave
Citrus Ave
Taylor Ave
Tyron Ave
Balsam Ave
Oleander Ave
Washington Dr
21
I-10 W
I-10 E
San Bernardino Fwy
Cypress Ave
Union Pacific
Boyle Ave
Slover Ave
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
0
250
500
1,000
Feet

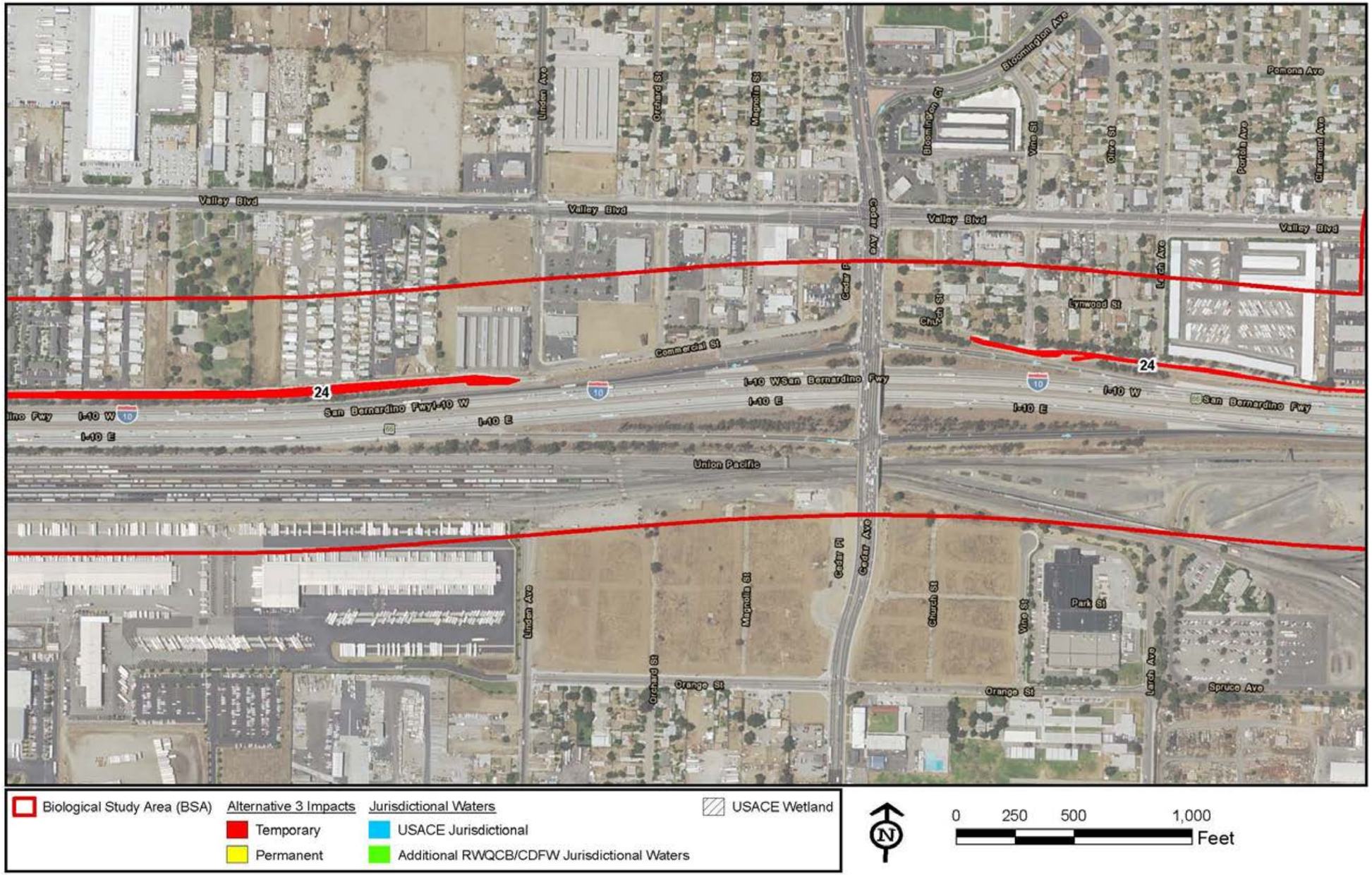
This page intentionally left blank.


Valley Blvd
Valley Blvd
Valley Blvd
Valley Blvd
Juniper Ave
Sierra Ave
Vineyard Vly
Healthcare Pky
Washington Dr
21
24
I-10 W
I-10 E
San Bernardino Fwy
Union Pacific
Spur
Palm Dr
Boyle Ave
Slover Ave
Tower Ct
Empire Center Blvd
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

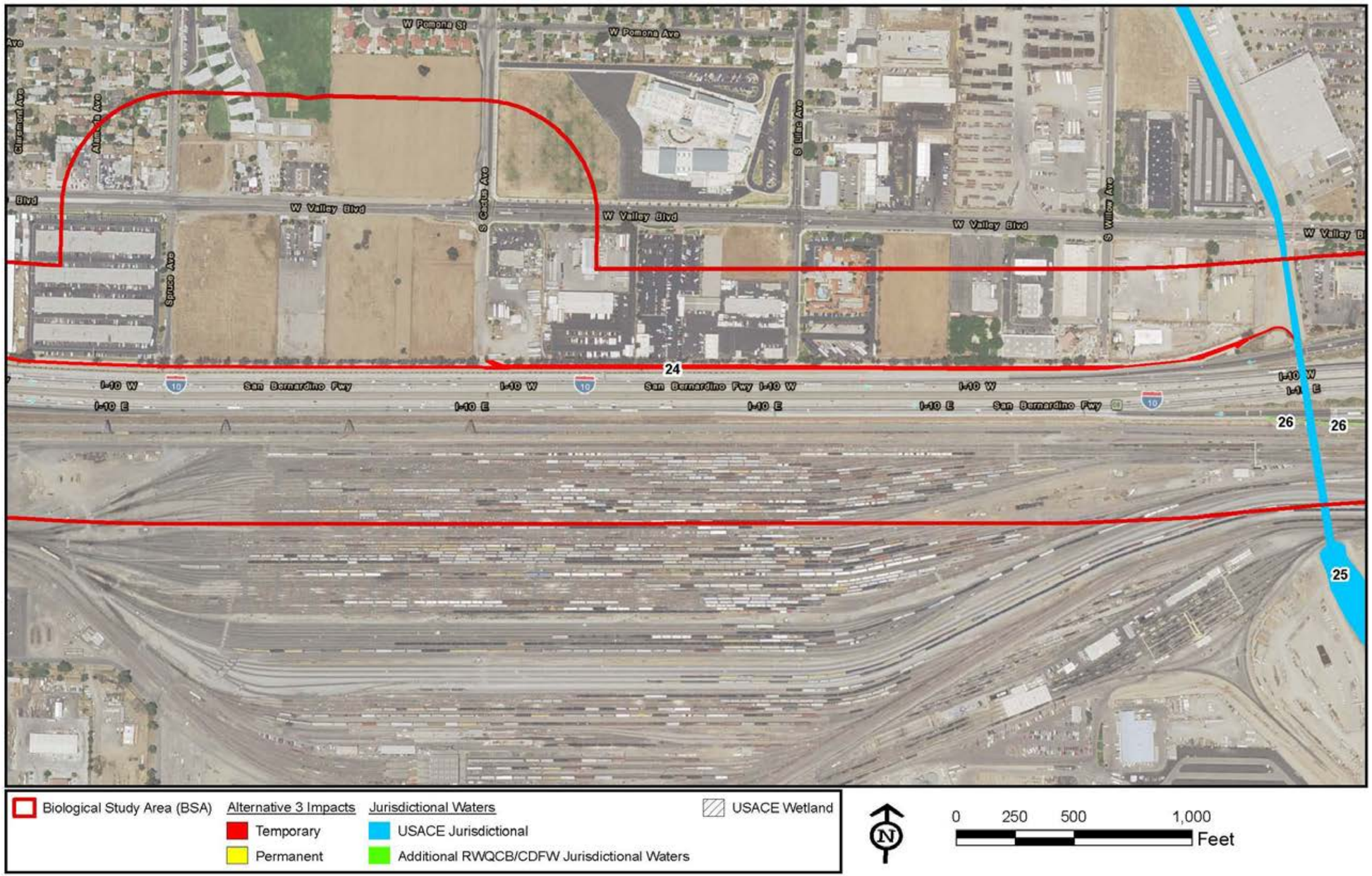
This page intentionally left blank.


Valley Blvd
Valley Blvd
Valley Blvd
Valley Blvd
Alder Ave
Locust Ave
Taylor Ave
Taylor Ave
24
I-10 W
I-10 W San Bernardino Fwy
I-10 W
San Bernardino Fwy
I-10 W
San Bernardino Fwy
I-10 W
San Bernardino Fwy
I-10 E
I-10 E
I-10 E
I-10 E
I-10 E
Union Pacific
Spur
Spur
Alder Ave
Locust Ave
Slover Ave
Slover Ave
Slover Ave
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

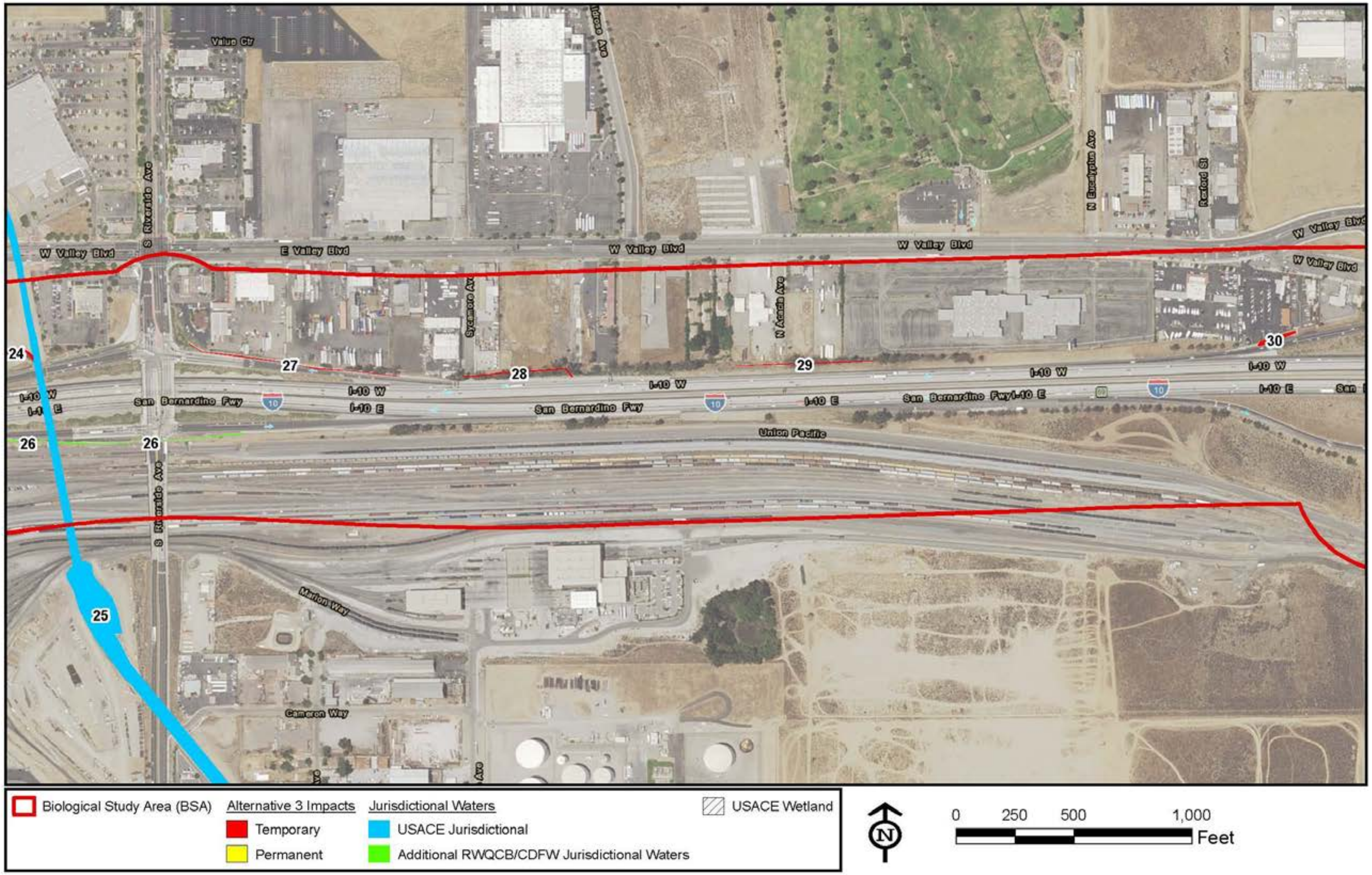
This page intentionally left blank.


Valley Blvd
Valley Blvd
Valley Blvd
Valley Blvd
Linden Ave
Orchard St
Magnolia St
Cedar Ave
Cedar Pl
Bloomington Ave
Bloomington Cir
Vine St
Olive St
Pomona Ave
Claremont Ave
Locust Ave
Church St
Elmwood St
Commercial St
24
I-10 W San Bernardino Fwy
I-10 E
I-10 W
San Bernardino Fwy
Union Pacific
Orange St
Park St
Spruce Ave
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

This page intentionally left blank.


W Pomona St
W Pomona Ave
W Valley Blvd
W Valley Blvd
W Valley Blvd
S Cactus Ave
S Lilac Ave
S Willow Ave
Spruce Ave
24
25
26
26
I-10 W
I-10 E
San Bernardino Fwy
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

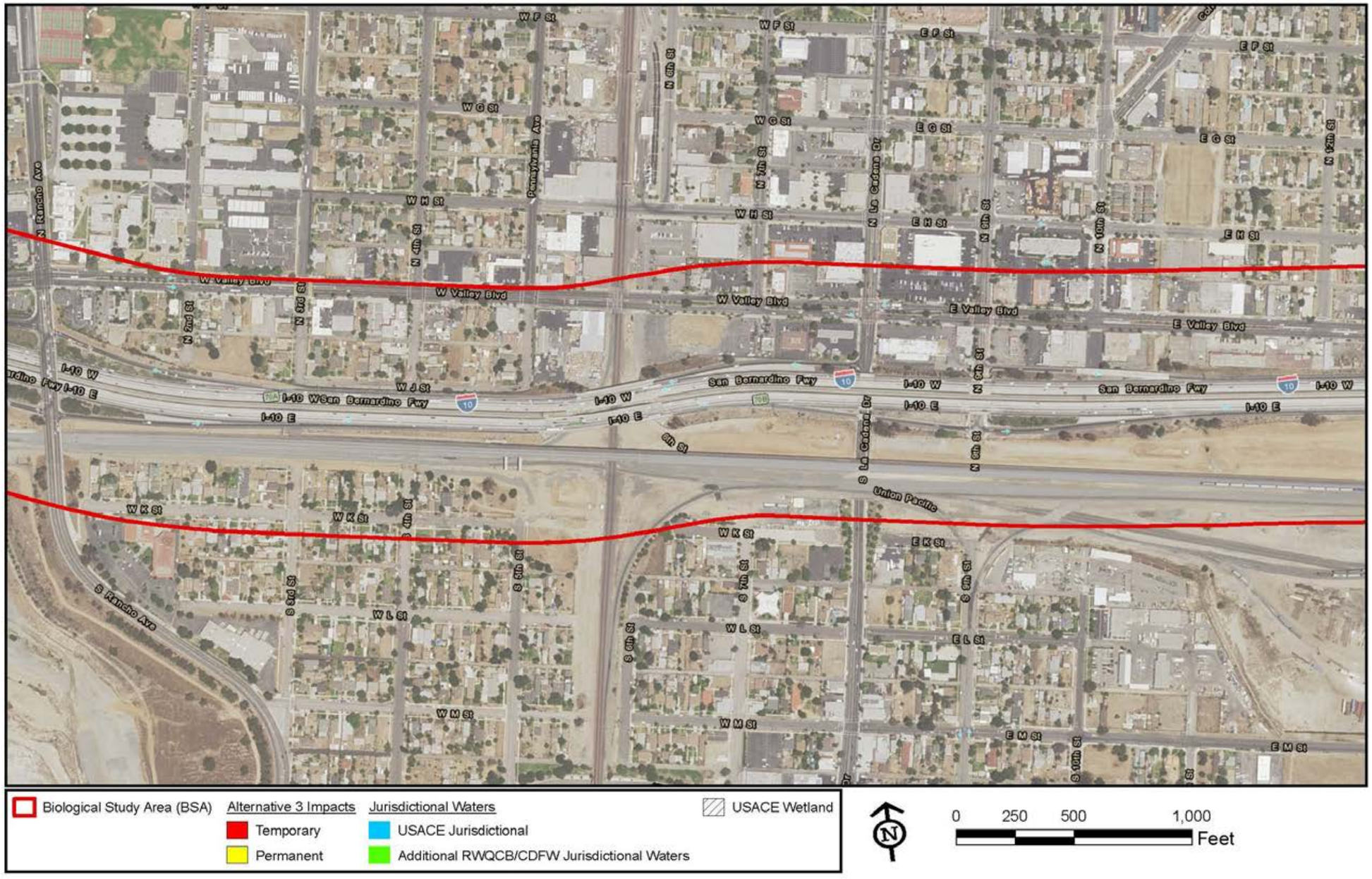
This page intentionally left blank.


Value Ctr
S Riverside Ave
W Valley Blvd
E Valley Blvd
W Valley Blvd
W Valley Blvd
Sycamore Ave
N Acacia Ave
N Eucalyptus Ave
Rexford St
W Valley Blvd
W Valley Blvd
24
27
28
29
30
I-10 W
I-10 E
San Bernardino Fwy
San Bernardino Fwy
San Bernardino Fwy/I-10 E
10
26
26
Union Pacific
S Riverside Ave
25
Marlon Way
Cameron Way
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

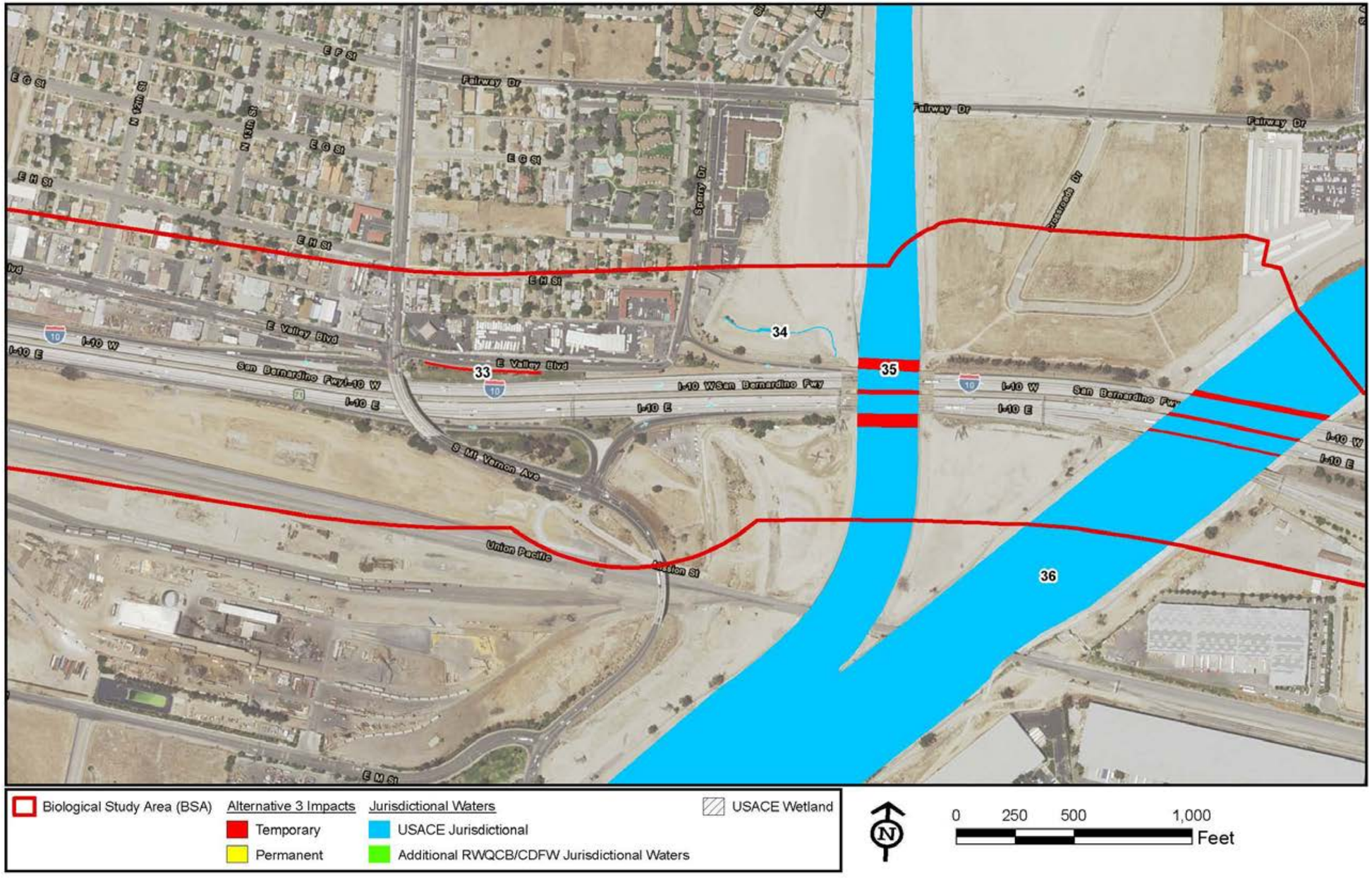
This page intentionally left blank.


Blue Dr
Green Cir
Plum Pl
Pepper Ave
Meridian Ave
W Valley Blvd
30
31
32
I-10 W
I-10 E
San Bernardino Fwy
Nemoca Ave
Jackson St
W F St
W G St
Kelly Ln
Grand Ave
W H St
Rancho Ave
Union Pacific
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

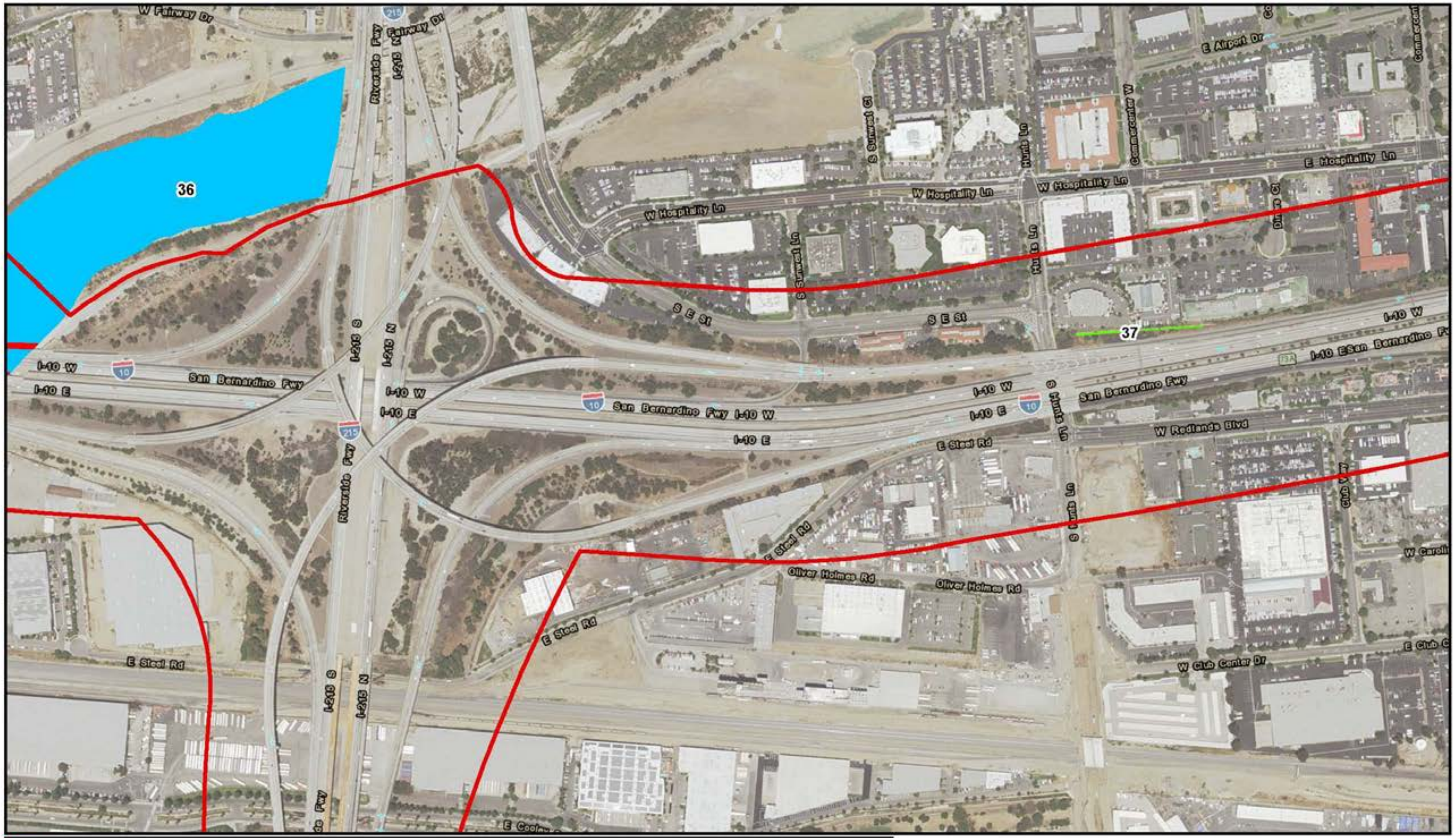
This page intentionally left blank.


W F St
W G St
W H St
W K St
W L St
W M St
E F St
E G St
E H St
E K St
E L St
E M St
N Rancho Ave
S Rancho Ave
Pennsylvania Ave
La Cadena Dr
W Valley Blvd
E Valley Blvd
I-10 W
I-10 E
I-10 W/San Bernardino Fwy
San Bernardino Fwy
Union Pacific
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
0
250
500
1,000
Feet

This page intentionally left blank.


E F St
E G St
N Mt Vernon Ave
E H St
Fairway Dr
Sperry Dr
Fairway Dr
Fairway Dr
Fairway Dr
E Valley Blvd
I-10 W
I-10 E
San Bernardino Fwy
33
34
35
36
S Mt Vernon Ave
Union Pacific
E M St
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

This page intentionally left blank.



Biological Study Area (BSA)

Alternative 3 Impacts
- Temporary
- Permanent

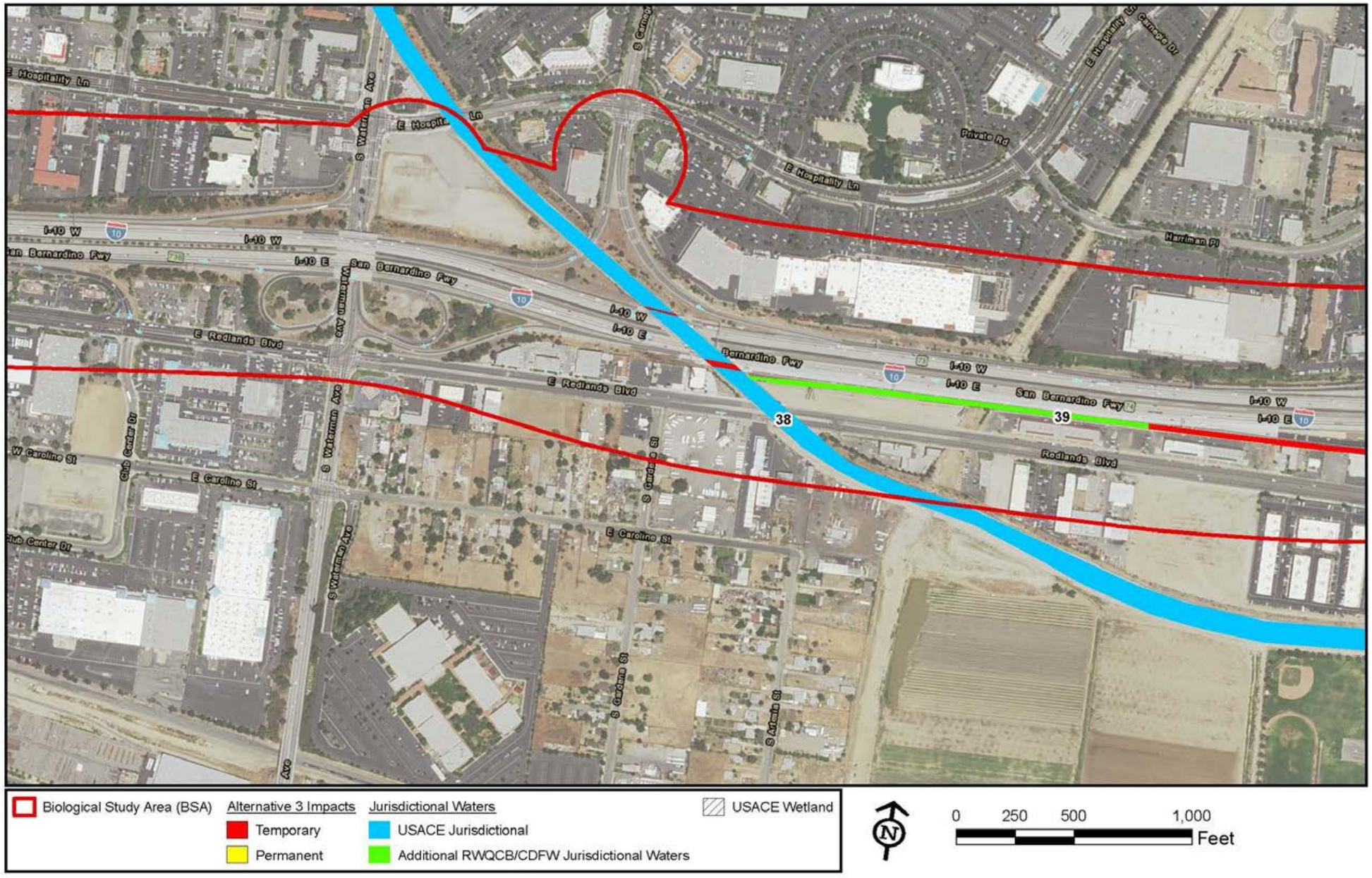
Jurisdictional Waters
- USACE Jurisdictional
- Additional RWQCB/CDFW Jurisdictional Waters

USACE Wetland

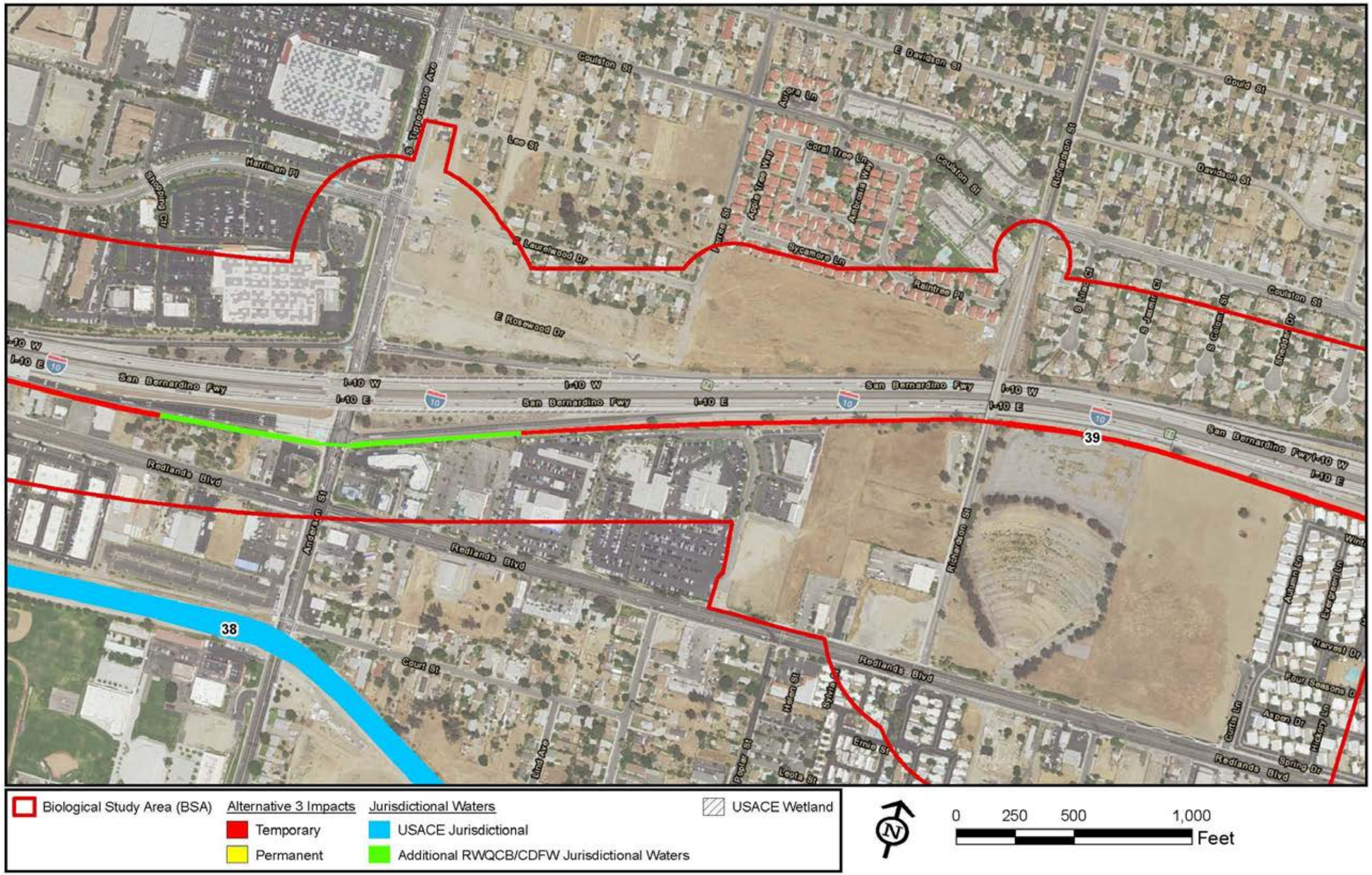
N

0 250 500 1,000 Feet

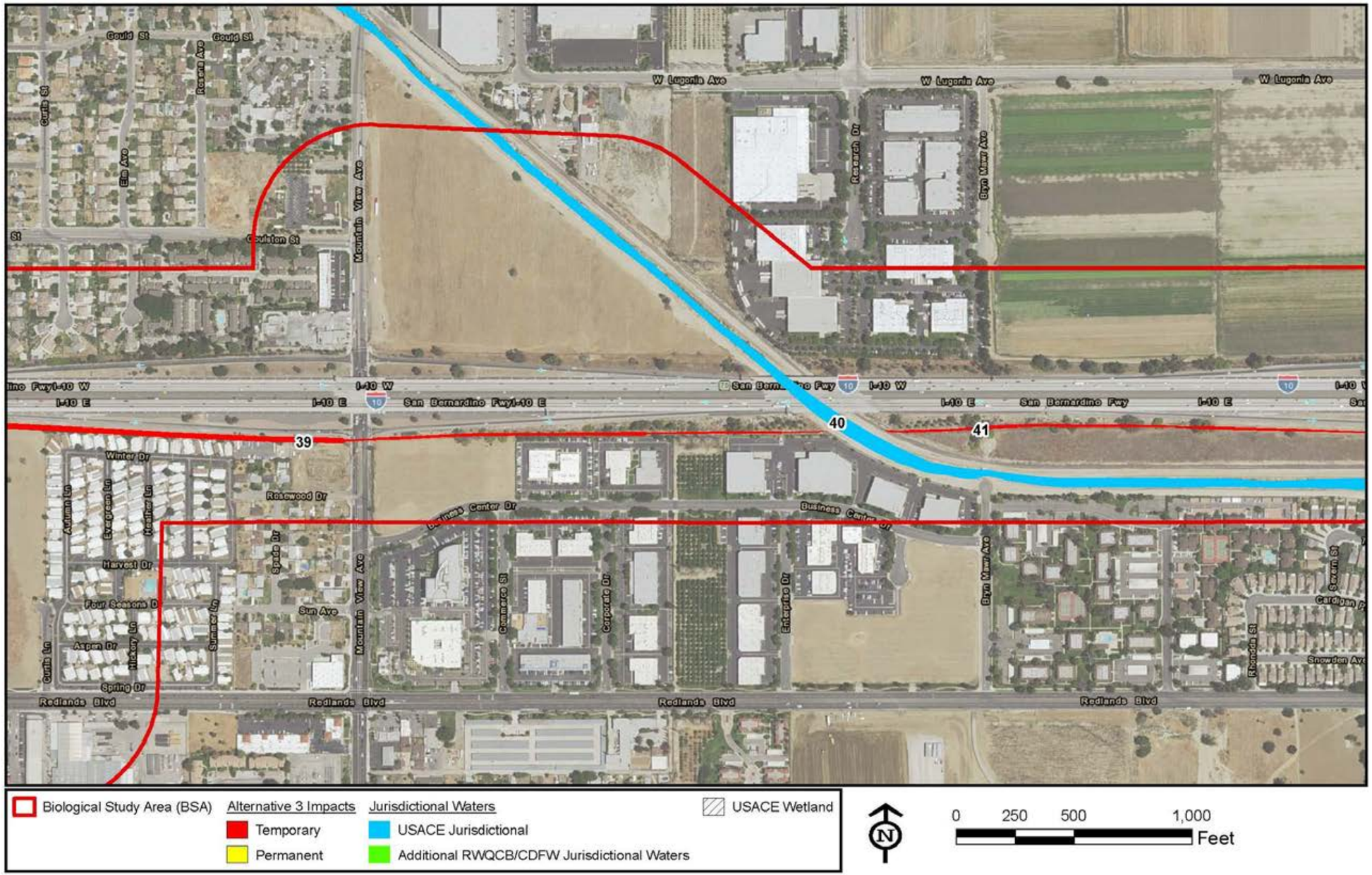
This page intentionally left blank.


E Hospitality Ln
S Waterman Ave
E Hospitality Ln
S Carnegie Dr
E Hospitality Ln
Private Rd
Harriman Pl
I-10 W
I-10 E
San Bernardino Fwy
E Redlands Blvd
Bernardino Fwy
38
39
Redlands Blvd
W Caroline St
Club Center Dr
E Caroline St
S Gardena St
S Artesia St
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

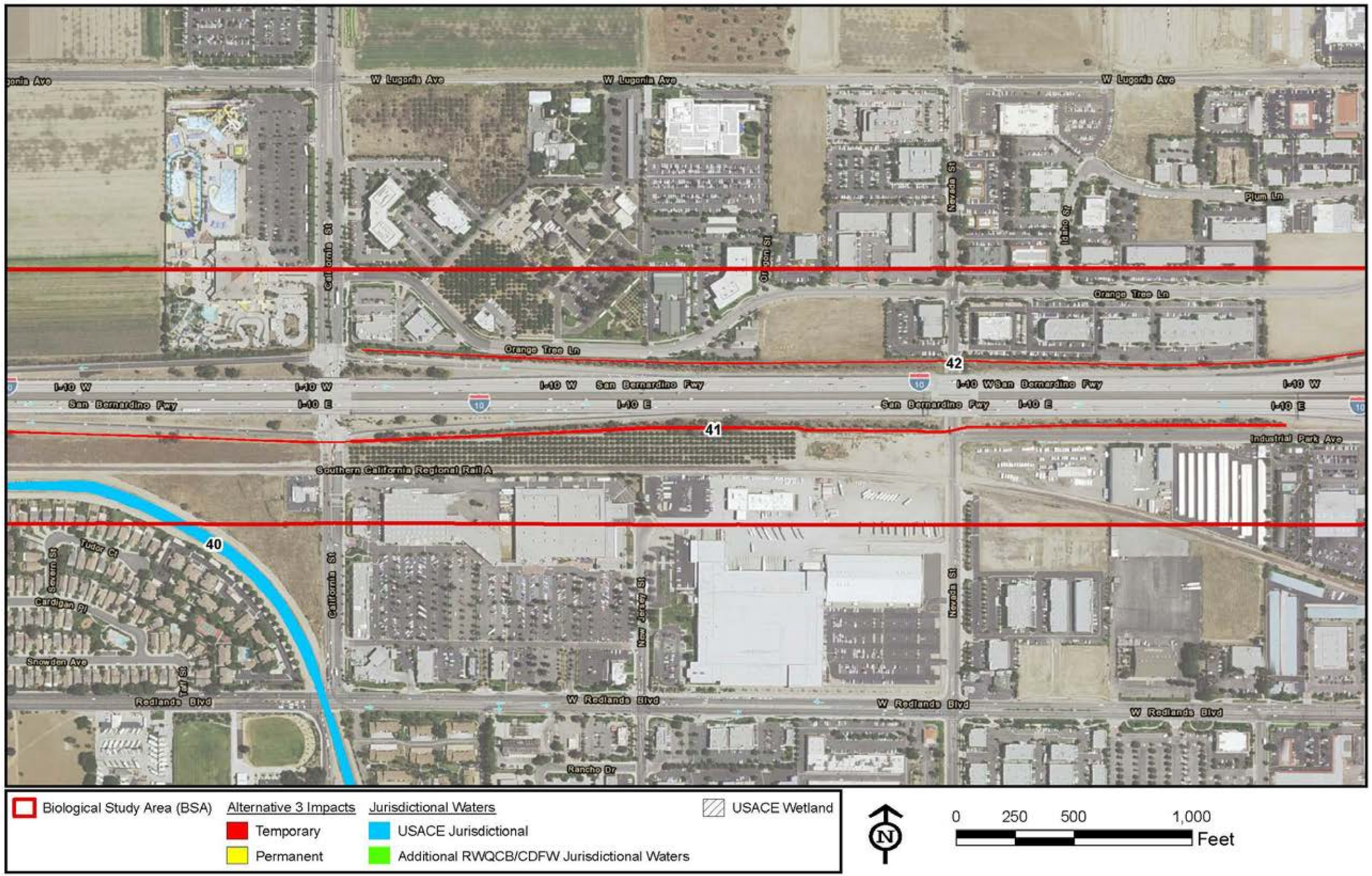
This page intentionally left blank.


Coulston St
E Davidson St
Gould St
S Tippecanoe Ave
Low St
Harriman Pl
Shopping Ctr
Laurelwood Dr
Apple Tree Way
Coral Tree Ln
Ambrosia Way
Sycamore Ln
Raintree Pl
Alhambra St
Davidson St
E Rosewood Dr
I-10 W
I-10 E
San Bernardino Fwy
39
Redlands Blvd
Anderson St
38
Court St
Lind Ave
Foster St
Leota St
Ernie St
Richardson St
Harvest Dr
Four Seasons Dr
Aspen Dr
Spring Dr
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

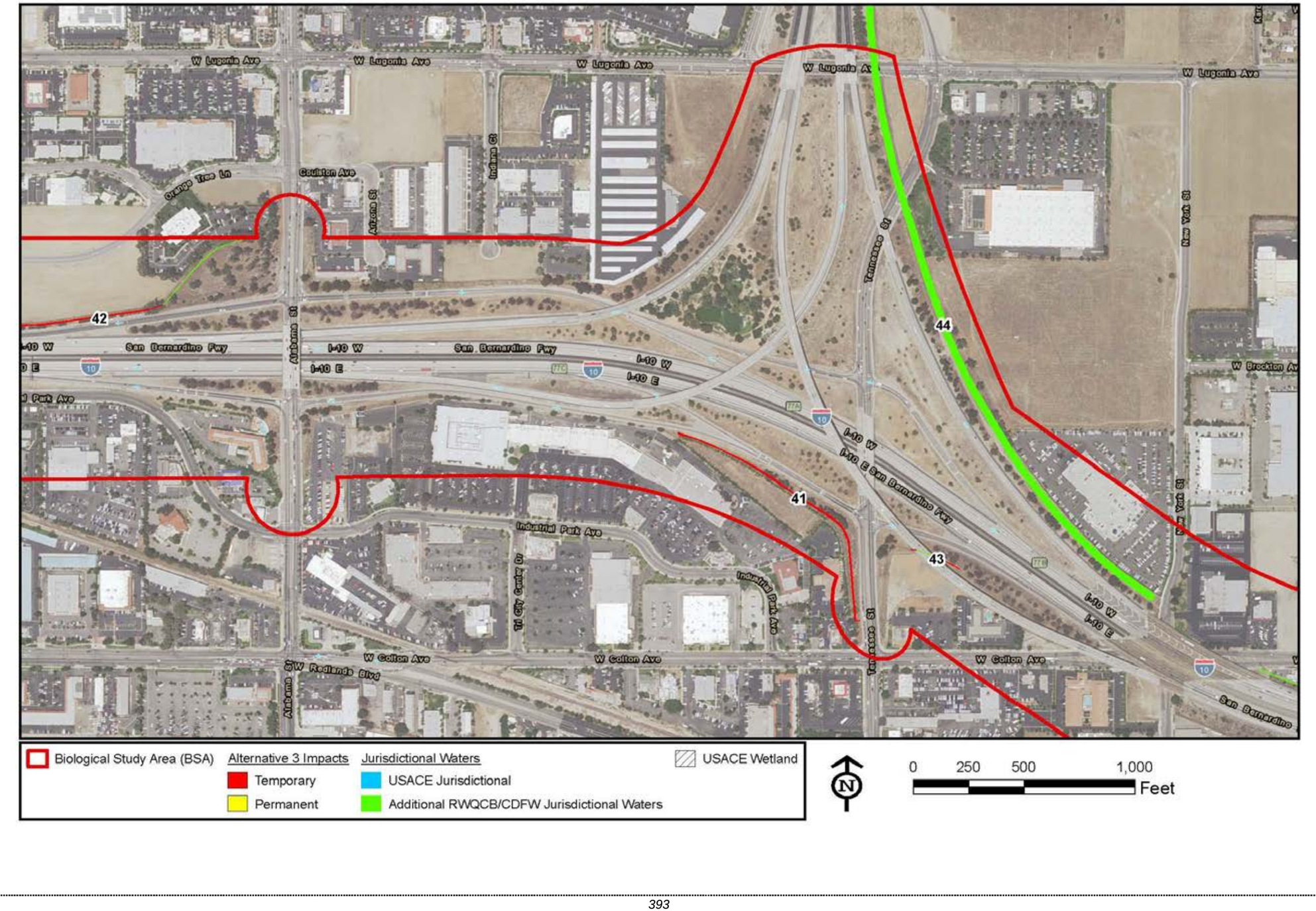
This page intentionally left blank.


Gould St
Gould St
Reseda Ave
Curtis St
Elm Ave
W Lugonia Ave
W Lugonia Ave
W Lugonia Ave
Research Dr
Bryn Mawr Ave
Mountain View Ave
Coulston St
I-10 W
I-10 E
I-10 E
San Bernardino Fwy I-10 E
I-10 W
I-10 E
San Bernardino Fwy
I-10 E
40
41
39
Winter Dr
Autumn Ln
Evergreen Ln
Heather Ln
Rosewood Dr
Spade Dr
Business Center Dr
Business Center Dr
Harvest Dr
Four Seasons Dr
Summer Ln
Sun Ave
Commerce St
Corporate Dr
Enterprise Dr
Bryn Mawr Ave
Severn St
Cardigan Ave
Curtis Ln
Aspen Dr
Hickory Ln
Rhondda St
Snowden Ave
Spring Dr
Redlands Blvd
Redlands Blvd
Redlands Blvd
Redlands Blvd
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

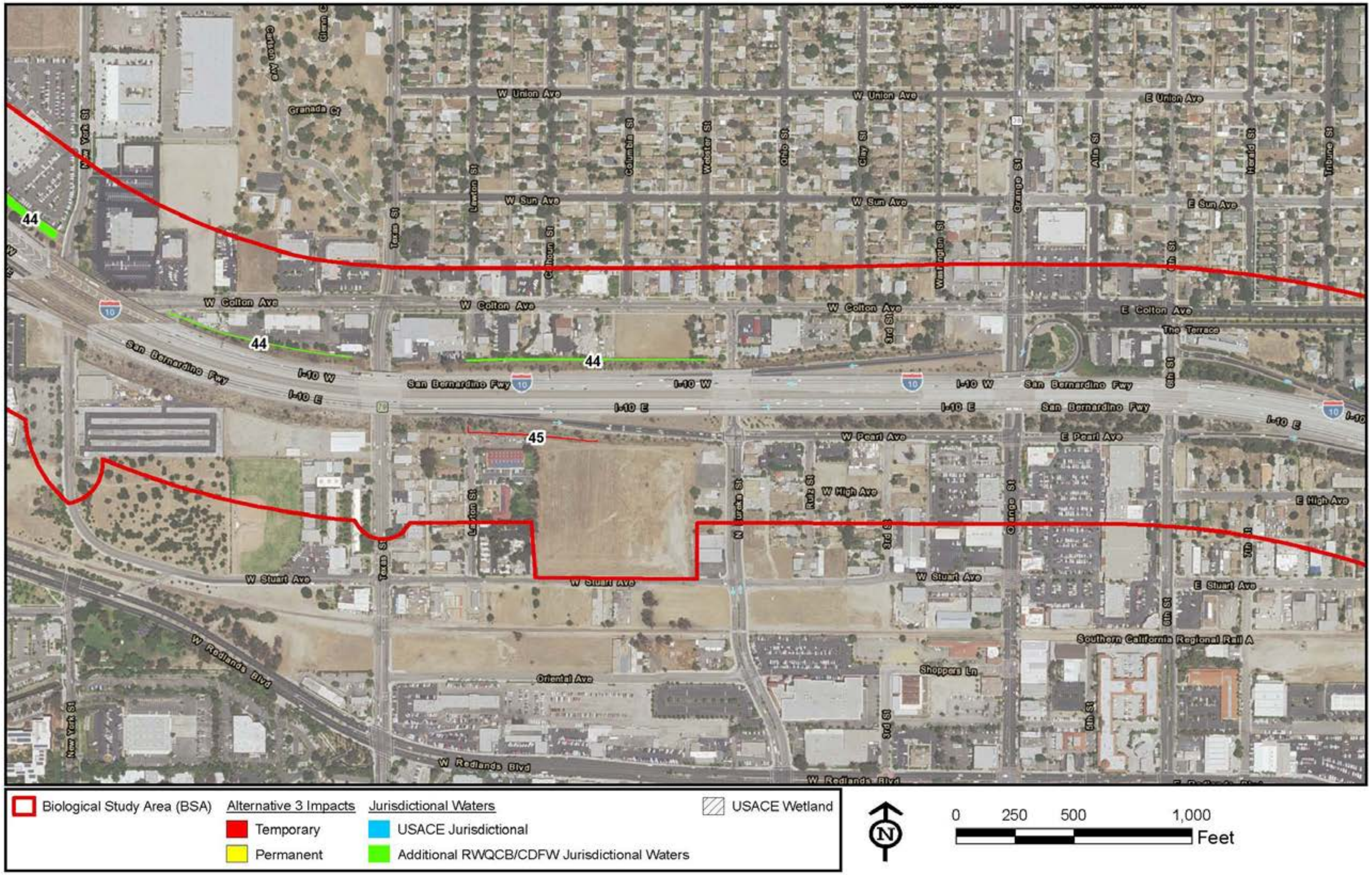
This page intentionally left blank.


W Lugonia Ave
W Lugonia Ave
W Lugonia Ave
California St
Orange Tree Ln
Orange Tree Ln
Nevada St
Plum Ln
I-10 W
San Bernardino Fwy
I-10 E
42
41
Southern California Regional Rail A
Industrial Park Ave
40
Tudor Ct
Sycamore St
Cardigan Pl
Snowden Ave
Redlands Blvd
New Jersey St
Rancho Dr
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

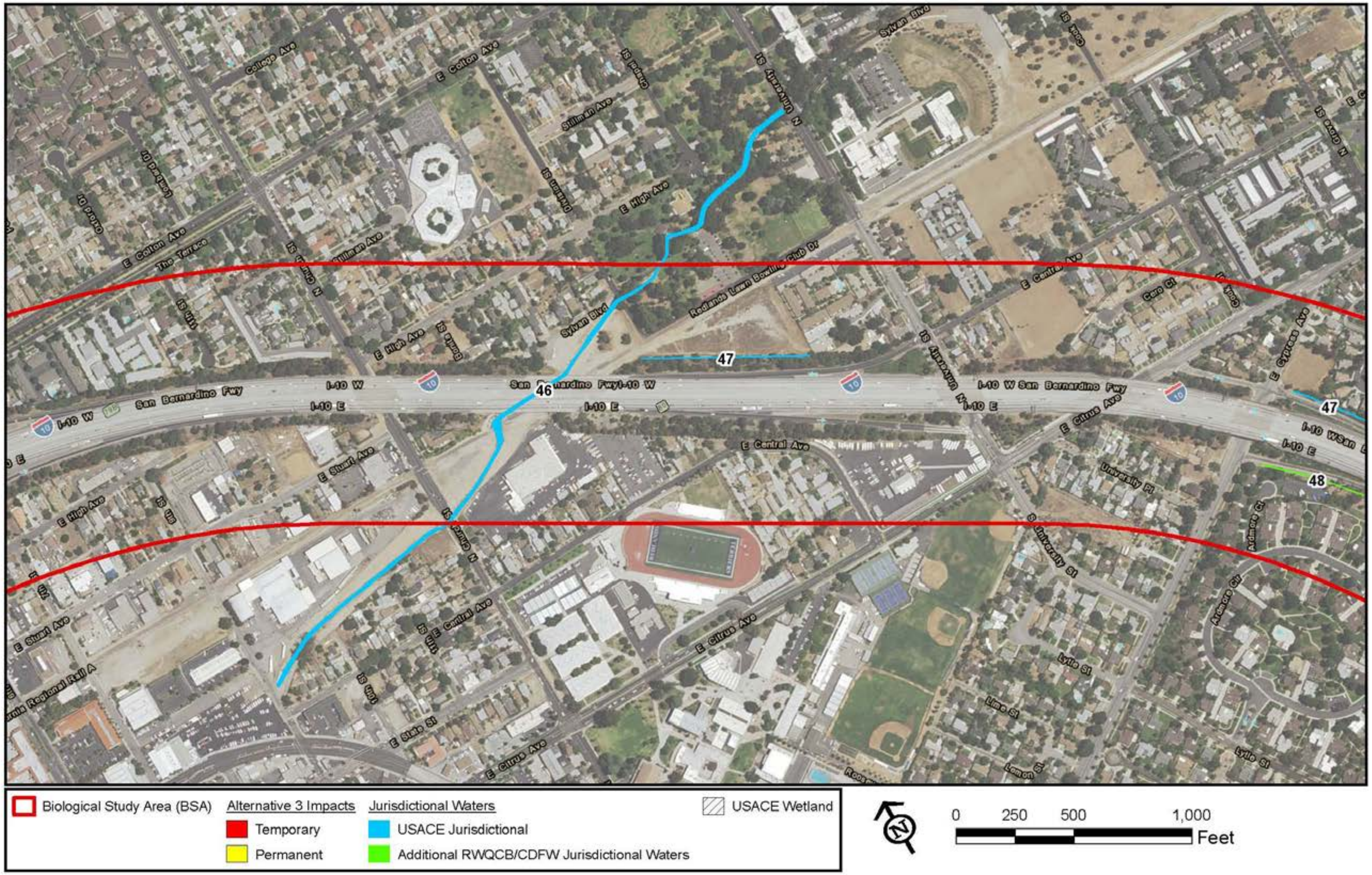
This page intentionally left blank.


W Lugonia Ave
Orange Tree Ln
Coulston Ave
Indiana Ct
Arizona St
Tennessee St
New York St
42
44
41
43
I-10 W
I-10 E
San Bernardino Fwy
Alabama St
Industrial Park Ave
Tri City Center Dr
W Colton Ave
SW Redlands Blvd
W Brockton Av
San Bernardino
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

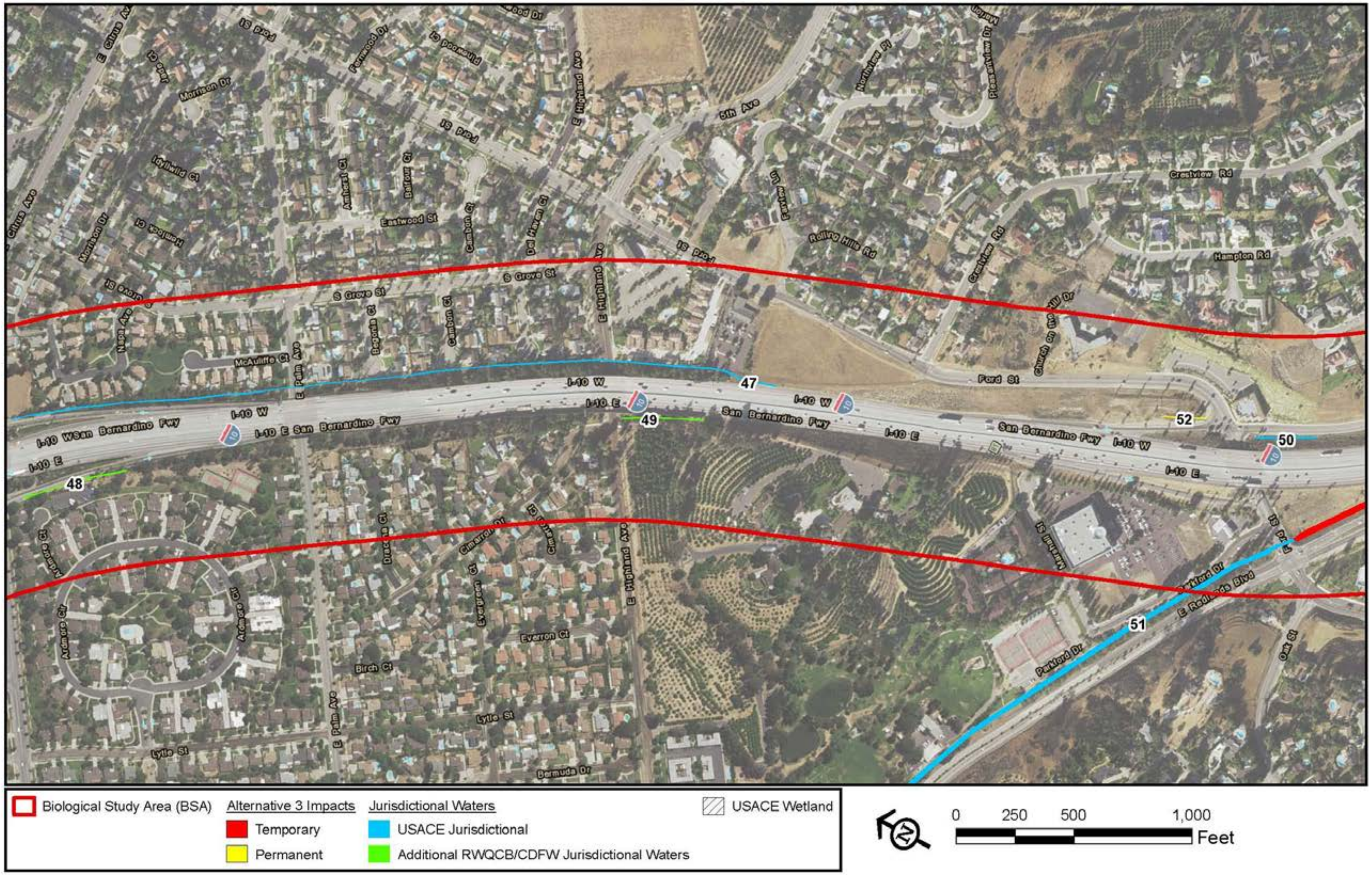
This page intentionally left blank.


W Union Ave
E Union Ave
W Sun Ave
E Sun Ave
W Colton Ave
E Colton Ave
The Terrace
Granada Ct
Carlson Ave
New York St
Texas St
Lawton St
Calhoun St
Columbia St
Webster St
Ohio St
Clay St
Washington St
3rd St
Orange St
Alta St
6th St
Herald St
Tribune St
44
45
San Bernardino Fwy
I-10 W
I-10 E
10
W Pearl Ave
E Pearl Ave
W High Ave
E High Ave
Ruiz St
N Eureka St
7th St
W Stuart Ave
E Stuart Ave
Southern California Regional Rail A
Oriental Ave
Shoppers Ln
5th St
W Redlands Blvd
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

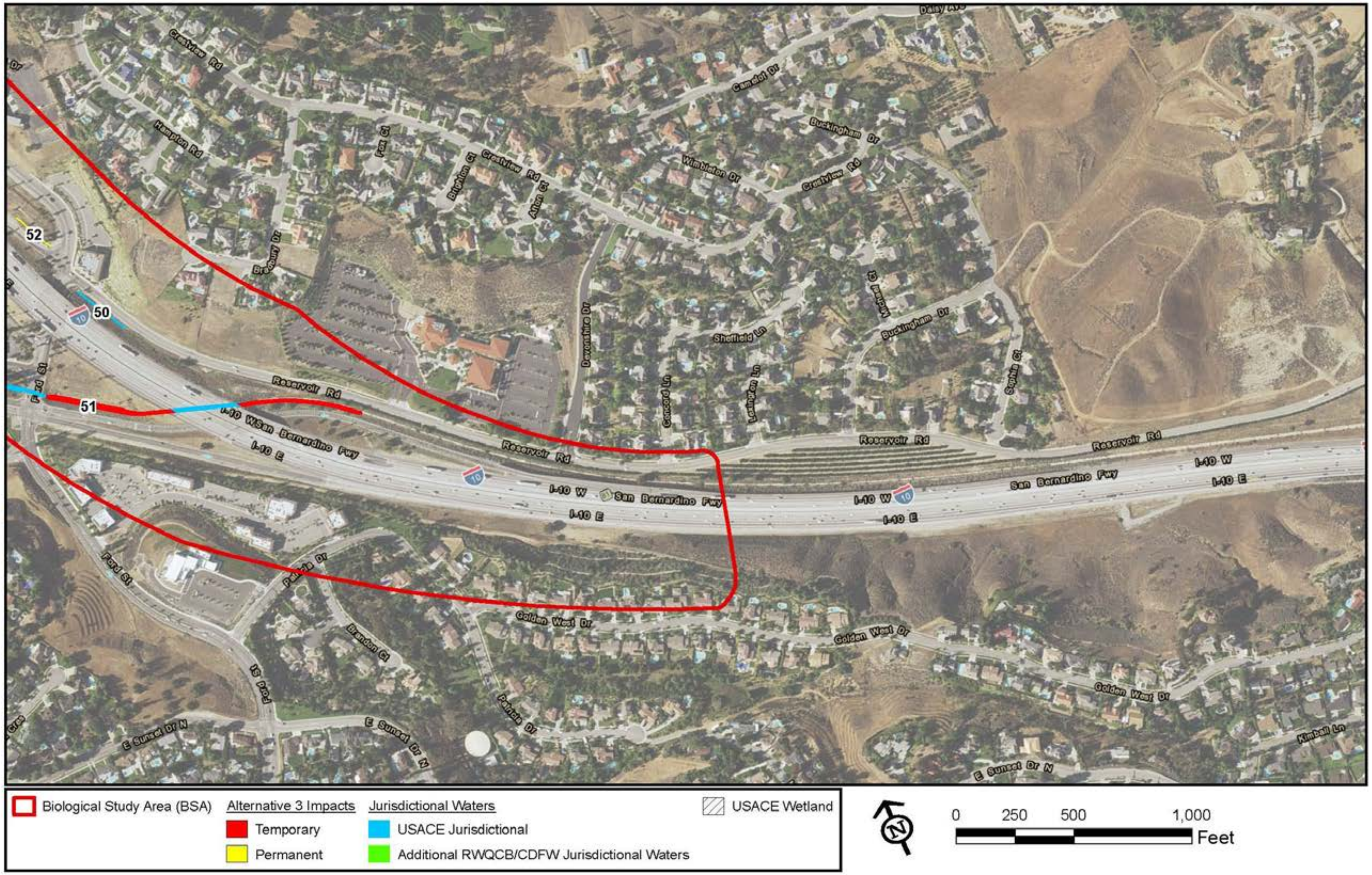
This page intentionally left blank.


Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet
46
47
48
College Ave
E Colton Ave
The Terrace
Oxford Dr
Lombard Dr
N Church St
Stillman Ave
Chapel St
Division St
E High Ave
N University St
Sylvan Blvd
Redlands Lawn Bowling Club Dr
Bonita St
11th St
I-10 W
I-10 E
San Bernardino Fwy
San Bernardino FwyI-10 W
I-10 W San Bernardino Fwy
E Central Ave
Cero Ct
Cook St
N Grove St
E Cypress Ave
E Citrus Ave
E Stuart Ave
9th St
E State St
10th St
University Pl
S University St
Ardmore Ct
Ardmore Cir
Lytle St
Lime St
Lemon St

This page intentionally left blank.


E Citrus Ave
Ford St
Fernwood Dr
Pinewood Ct
Jade Ct
Morrison Dr
Idyllwild Ct
Amherst Ct
Balfour Ct
Eastwood St
Hemlock Ct
Cambon Ct
Del Haven Ct
E Highland Ave
5th Ave
Northview Pl
Pleasantview Dr
Marion
Fairview Ln
Rolling Hills Rd
Crestview Rd
Hampton Rd
Church on the Hill Dr
S Grove St
Grove St
Napa Ave
Begonia Ct
McAuliffe Ct
E Palm Ave
Ford St
47
I-10 W
I-10 E
I-10 WSan Bernardino Fwy
I-10 E San Bernardino Fwy
San Bernardino Fwy
49
52
50
48
Ardmore Ct
Ardmore Cir
Dracena Ct
Cimarron Dr
Cimarron Ct
Evergreen Ct
Everton Ct
Birch Ct
Lytle St
Bermuda Dr
Marshall St
Parkford Dr
E Redlands Blvd
Oak St
51
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

This page intentionally left blank.


Crestview Rd
Hampton Rd
Fox Ct
Brighton Ct
Crestview Rd
Afton Ct
Bradbury Dr
Camelot Dr
Buckingham Dr
Wimbledon Dr
Crestview Rd
Daisy Ave
Devonshire Dr
Sheffield Ln
Buckingham Dr
Michael Ct
Sophia Ct
Concord Ln
Lexington Ln
52
50
51
Ford St
Reservoir Rd
I-10 W/San Bernardino Fwy
I-10 E
Reservoir Rd
Reservoir Rd
Reservoir Rd
I-10 W
San Bernardino Fwy
I-10 E
I-10 W
I-10 E
San Bernardino Fwy
I-10 W
I-10 E
Ford St
Patricia Dr
Golden West Dr
Golden West Dr
Golden West Dr
Brandon Ct
Ford St
Patricia Dr
E Sunset Dr N
E Sunset Dr N
E Sunset Dr N
Kimball Ln
Biological Study Area (BSA)
Alternative 3 Impacts
Temporary
Permanent
Jurisdictional Waters
USACE Jurisdictional
Additional RWQCB/CDFW Jurisdictional Waters
USACE Wetland
N
0
250
500
1,000
Feet

This page intentionally left blank.